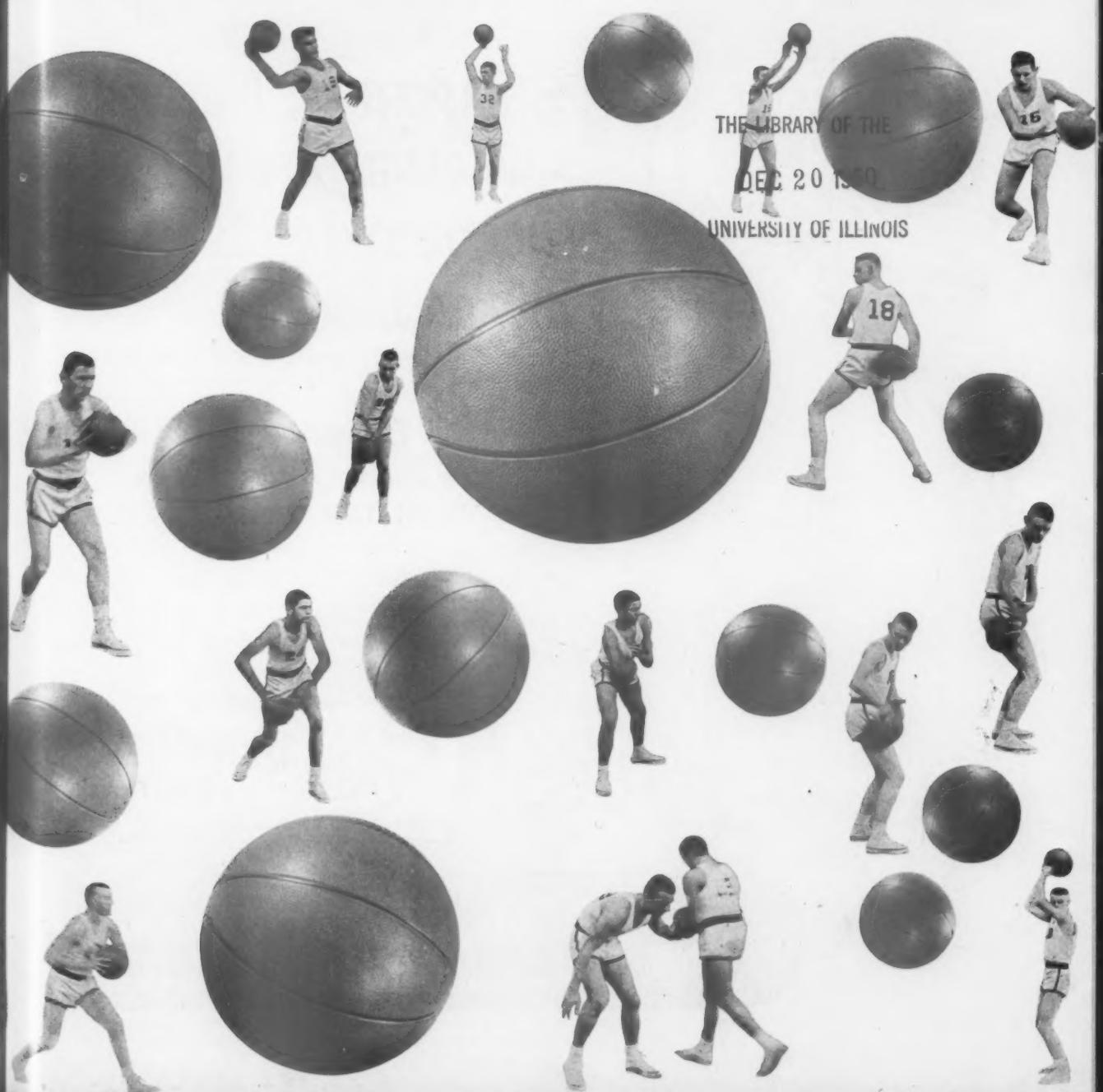


ATHLETIC JOURNAL

Vol. XXX No. 3

November, 1949



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The ATHLETIC JOURNAL

Nation-Wide Amateur Athletics

Volume XXX

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FRONT COVER ILLUSTRATION

Members of the East Aurora, Illinois, High School team show some of the passes with which they hope to befuddle their opponents. For more on passing see the 98 sequence pictures on pages 10-15.

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IRVING Mondschein, all-round athlete and decathlon star from N.Y.U., has assumed the post of head coach of football, basketball and track and Director of Intercollegiate Athletics at Lincoln University in Pennsylvania. He succeeds Chester Stackhouse. . . . The University of Pittsburgh is reviving wrestling as a varsity sport this year. Rex Perry of Tulsa, Oklahoma, will serve as head coach. . . . Warren Huey, regular end on four Michigan State football teams, is serving as assistant freshman football coach at MS. . . . Clifton DeVoll, former backfield coach at the University of Indiana, is now serving in that capacity at Beloit College. He formerly coached football and basketball at Negauene High School in Michigan. . . . The Bike Web Company has instituted the Sports Trail Century Club which was formed to give some recognition to coaches at small schools whose teams had won 100 or more contests in any one sport. The first coach to be honored was Mr. William Matthei whose cross country teams have won 100 meets. He was awarded the Century Club certificate by Arch Ward, Sports Editor of the Chicago Tribune. Future awards for the Sports Trail Century Club will be made by the Bike Web Company to coaches who write to Sports Trail giving their record of having won 100 or more games as a coach in any one sport. Such coaches will receive a framed certificate and will be given publicity in the Sports Trail publication.

* * *

THOSE who are interested in securing the Official Volley Ball Rule Book and Annual Guide, formerly published by A. S. Barnes, may do so by ordering from U.S.V.B.A. Printer, P. O. Box 109, Berne, Indiana. The 1950 book sells for 50 cents. . . . Iowa State has the latest in football formations—the "T-V" offense. Coach Abe Stuber has combined the standard T with a punt variously described as "half punt," "short punt," "friendly punt," and "V" formation. . . . City College of New York has added two of its graduates to its coaching staff. They are Douglas Dengeles and Frank Moran.

The latter was co-captain and Dengeles was voted most valuable player last year. . . . During his ten years as head coach at Michigan, Fritz Crisler's teams won 70, lost 16 and tied 3 games. His lifetime record at Minnesota, Princeton and Michigan since 1930 shows 116 wins, 32 losses and 9 ties. . . . Vince De Francisco, former guard and captain of the Northwestern football team, is now head football coach at Illinois (Western) State College. . . . Dick Clausen, Coe College football coach since 1948 will take on the added duties of director of athletics at Coe. Clausen also coaches basketball. . . . Ray Stanley, assistant basketball coach at Lafayette College, will become head coach this season. He will replace William Anderson who will devote his full time to the position of athletic director. . . . Paul Gubernali, former Columbia and professional passing star, is assisting Lou Little at Columbia this fall. . . . Albert Negratti has been named head basketball coach at Stephens High School, Rumford, Maine. He formerly coached at John Marshall High School, Rochester, New York.

* * *

JOHN VAUGHT'S impressive results as football coach at the University of Mississippi does not come as a surprise to those who know his record. In 1932 he was an All-American at Texas Christian and an all-Southwest Conference choice for three years. Following his graduation he coached for two seasons at North Side High School, Fort Worth, Texas. His next coaching assignment was line coach at North Carolina where he developed three All-Americans. During the war he served in the Navy and coached several service teams. Following this he assisted Red Drew before becoming head coach in 1947. In his first year he became the first "freshman" coach ever to win a Southeastern Conference championship. Moreover, it was Mississippi's first SEC title in history. He was the first "freshman" coach to win SEC Coach of the Year laurels. That year his team defeated T.C.U. in the Memphis Delta Bowl. . . . Francis McCormick, former Mar-

(Continued on page 70)

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The Role of Calcium As A Fatigue-Control Factor In Athletics

By CHARLES E. BEAUDRY, Ph. D.
Assistant Track Coach, St. Louis University

"Smaller percentages of calcium compounds are present in the blood and play an IMPORTANT part in the growth and PHYSIOLOGY of the body."

—McPherson

* * *

THE problem of fatigue in competitive athletics dates back to the age of Pericles. The Greek athlete, competing in track, the primate of all sports, was unable to explain the paralyzing effect of fatigue on his leg muscles. Intense fatigue killed Ladas in the last step of the exhausting 1500-meter race in the fifteenth Olympiad when Sparta defeated Greece. This tragedy stimulated profound thought. Great minds of antiquity pondered in vain over the problem of body fatigue.

Today, however, modern scientific research has removed part of the cloak that mystified the ancients. Fatigue has resolved itself into a mere accumulation of lactic acid in the blood stream which causes a temporary paralysis of the tactile nerve endings and concomitant loss of muscular co-ordination.

An athlete competing in the mile run presents an interesting chemical study. The first lunge forward after the report of the starter's gun initiates the expending of glycogen from the liver. Muscular contraction and expansion breaks down this body gasoline into carbon dioxide, water vapor and a fatigue substance called acid hydropropionic. This poison in sufficient quantities is capable of inducing total muscular and nervous paralysis and even death. Fortunately, free oxygen filtrating into the blood stream through the alveoli or air sacs of the lung, and transported by virtue of its attraction for haemoglobin in the red blood corpuscles quickly oxygenizes the fatigue acid back into useful and muscular propelling glycogen.

All things being equal, the distance ace owes his record breaking potentialities to a superior biochemical factory. In most cases, a low heart beat, superior arterial elasticity, a high erythrocyte count and a high haemoglobin coefficient are responsible for his enviable ability to run opponents into the ground.

All this brings up this exceedingly interesting question: What can be done

to increase the efficiency of the biochemical processes in the removal of fatigue poisons? A glance at the record book will afford us one interesting clue. An overwhelming majority of world record holders in the distance runs have regularly come from sharply-defined areas of the world.

The Scandinavian countries, central Europe, and other isolated areas have produced a very high percentage of the world's outstanding distance stars. However, it is extremely interesting to note that these same countries fall into the world calcium sufficiency areas. In other words, where the soil is rich in calcium, athletes possess greater powers of stamina and endurance. This would logically advance the assumption that the stamina of an athlete from a calcium deficiency belt would be improved should assimilable calcium be introduced into his diet.

However, the parathyroid glands rigorously control the amount of soluble calcium capable of being introduced into the blood stream. It has often been estimated that the parathyroids will normally expel over ninety-nine per cent of any given amount of pure calcium orally introduced into the body. However, the calcium ester of phosphoric acid with soluble iron pyrophosphate as a catalyst, when taken on an empty stomach, is partially assimilable into the blood stream.

To determine the efficiency of calcium as a fatigue-control factor, the members of the St. Louis University swimming team were persuaded to submit to a thirty-day calcium test. Three times daily, nine grain capsules of dicalcium phosphate and soluble iron pyrophosphate were taken orally. The results were extremely gratifying.

(Continued on page 51)

CHARLES E. BEAUDRY competed in track at Marquette University and at Laval University in Canada. Among the championships he has won are the following: Central Collegiate sprints (four times), Drake Relays sprints, Michigan Relays sprints, Purdue Relays sprints, National Decathlon, National Pentathlon, Canadian Collegiate sprints and broad jump, Quebec A.A.U. dashes and high jump. His best competitive mark was 9.5 in the 100-yard dash.

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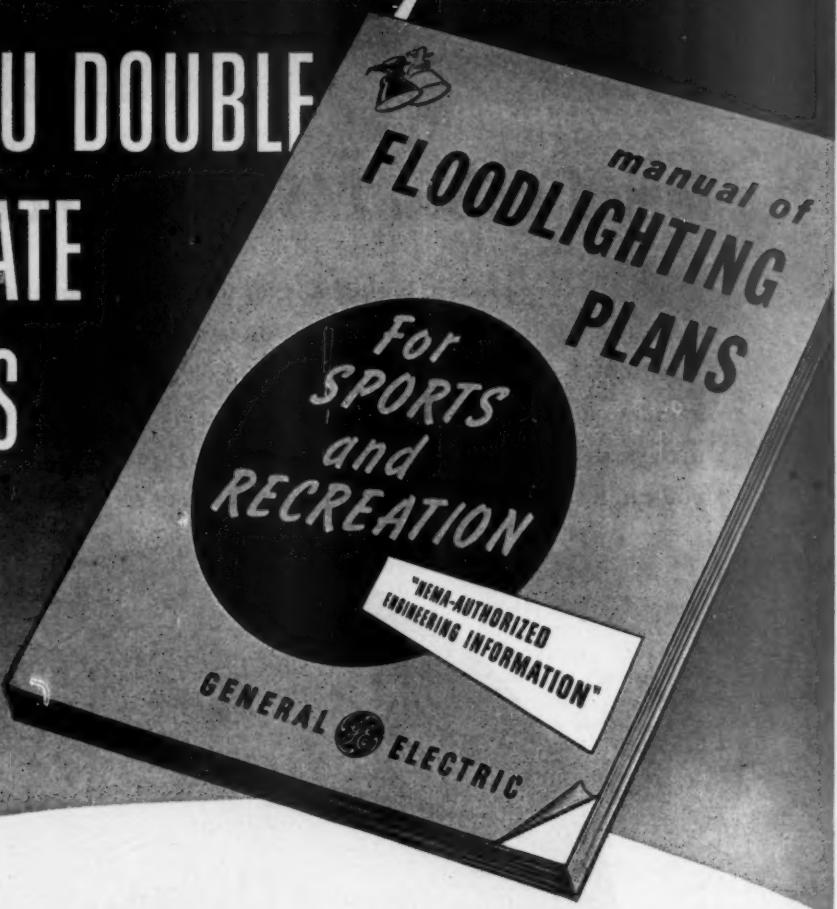
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Of course floodlighting takes planning, and that's where General Electric's new manual, "Floodlighting

Plans for Sports and Recreation" comes in. It's the latest word—all plans based on "NEMA-authorized engineering information." Not only lighting plans but lists of materials are included. There are plans for any sport from archery to volley ball—with special sections for baseball and football.

Now is the time to start planning for next season. Make your school's free time *fun time*. A copy of this book of plans is yours for the asking. Write for bulletin GET-1284C, Apparatus Department, General Electric Company, Schenectady 5, New York.

GENERAL  ELECTRIC

451-138

Kansas State Guard Play In Offense

By JACK GARDNER

Basketball Coach, Kansas State University

No longer should a coach select his guards merely on rebounding and defensive ability. The modern guard must possess qualities equal to and similar to any other player. Today's style of offense demands it. In many systems it is difficult to distinguish guards from forwards due to their interchanging assignments. The old rugged rebounding defensive specialist would find it difficult to win a position on a successful team of today. Yes, the old days of the back guard are gone.

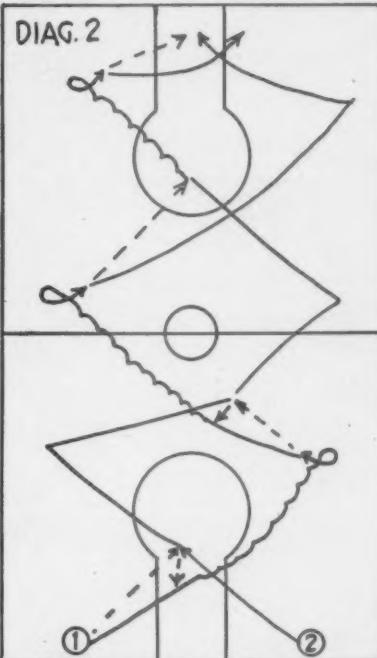
In the Kansas State offensive patterns the guards are important cogs in all maneuvers. They start the offense by putting the ball in play. We like for them to be expert dribblers, ball-handlers, drivers, long shooters and, in general, steady, clever, cool, floor men. They are our play makers and much is expected of them in the way of generalship. They initiate the play and set the pace according to the score and time remaining to play. Little wonder is it then that good guard play in the Kansas State offense is essential. The guards are our balance wheels and our team

will be no smarter than the boys assigned to those positions.

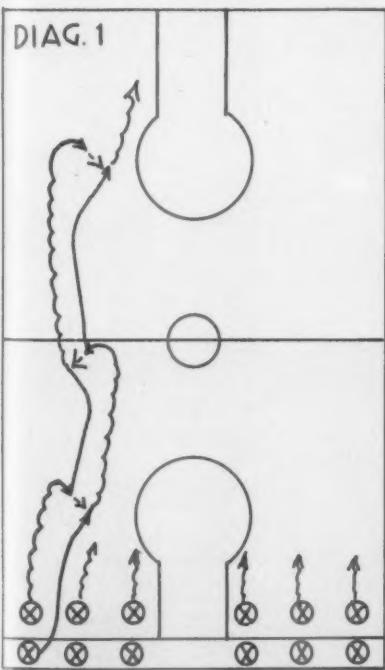
The First Phase of Guard Play

The first phase of guard play in offense usually starts after the opponents score or after a recovery. The

DIAG. 2



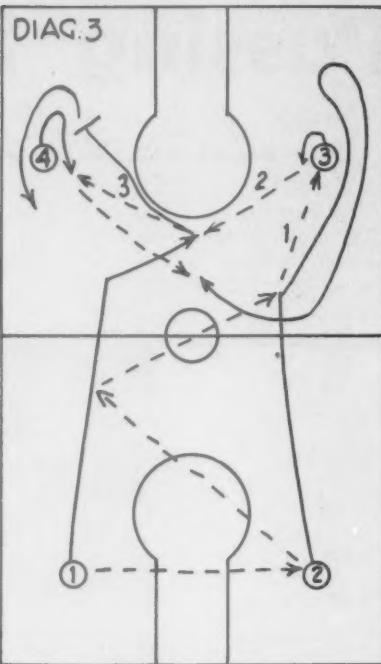
DIAG. 1



defensive situation then names the play and the guards are taught to quickly recognize the opponents tactics and adjust the attack accordingly. They start the fast break if the opportunity is present, advance the ball slowly and penetrate the defense, if it is back, or bring the ball out of the back court against a pressing defense. A great deal of time is spent on the fundamentals and drills which prepare our guards to attack every defensive situation that may be encountered.

The following are fast break fundamentals we stress:

1. Screening out and backboard recoveries.
2. The hook pass.
3. The baseball pass.
4. Tipping out to forward after missed free throw.



5. Quick reaction from defense to offense.
6. Stealing the ball — Interceptions.
7. Running with maximum speed while handling ball and dribbling.
8. Drive-in shots; short and medium from all angles.
9. Stops with balance upon completion of fast dribble.

Drills for Advancing Ball Against Pressing Defense

1. *Dribble, Stop, Pivot and Short Pass Drill.* This is an excellent drill to develop dribbling, stopping, pivoting, trailing, change of direction, timing, driving by to set up an outside screen, and the short pass. All of these fundamentals must be mastered in order for guards to bring the ball out of the back court successfully against a pressing defense.

The players work in pairs and use the full length of the court (Diagram 1). The first guard dribbles down court about fifteen feet, stops, pivots and screens out an imaginary defensive man. As the dribbler pivots, the second guard trails late and fast, using a change of direction, and cuts by the pivoter. The short double-pass is given the trailer as he approaches the pivoter. The first dribbler now becomes the trailer, but does not start his cut until the dribbler has stopped. The process is continued the length of the court. About six pairs may work at one time on the average court. More

(Continued on page 61)

Passing Illustrated

By CECIL R. MAY

Basketball Coach, East Aurora, Illinois, High School

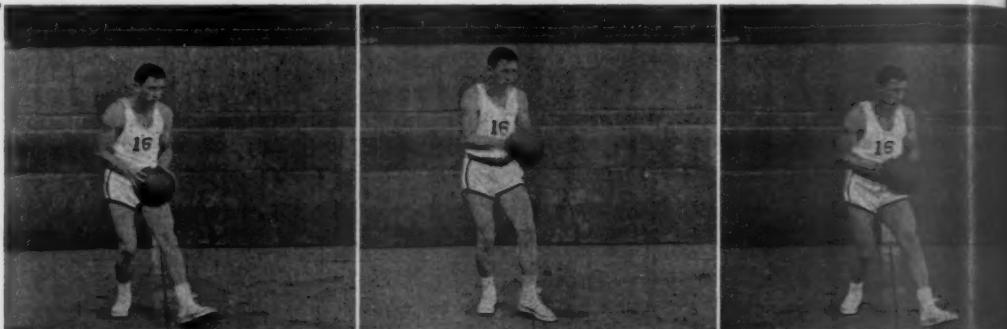
GET the habit of looking ahead before starting a pass action. Remember the eye is faster than the muscle movement — the distance to

the receiver is important plus the fact that it takes time for the ball to get to the receiver — get the habit of judging the time it will take the ball to reach

the receiver — speed and quickness must be considered. The all-important position of the defensive opponent must be critically observed and a judgment formed as to whether you will pass or wait for a safe, sure opening. By all means, protect the ball! Wishful thinking and wishful passing is disastrous. Follow the rules of accurate passing:

1. A fast, quick look ahead of the passing movement.
2. Note distance and time elements.

Two Handed Chest Push Pass



Two Handed Underhand Pass



Two Handed Bounce Pass



One Handed Bounce Pass



3. Note position of opponent.
4. The passing action must be snappy, quick and accurate!

The ball must be safely delivered to the receiver so that the receiver will be able to catch it with ease. Therefore, the ball-handler assumes 100 percent of the responsibility for the safety of the ball — whatever the receiver does in terms of getting into position for the pass is purely incidental — the receiver must be open to receive a pass.

The two-handed, chest push-pass is the team pass we use most: We use the two-handed underhand pass repeatedly—while the one-handed shoulder pass is important for long passes and we use it in getting our fast break started. Other passes will not be used very much and will be fitted into our offense as minor variations. The use of the bounce pass is a major variation in our one- and two-handed team passes.

Hook passes are dangerous to use because they require long movements that are obvious to the opponents. We use them only when up in the air near the basket. Offensively, we use them after faking a shot and passing out to a teammate or when going out of bounds on a shot attempt near the basket and passing out to a teammate. Defensively it may be used to start a fast break on a quick pass out. All in all we use it sparingly.

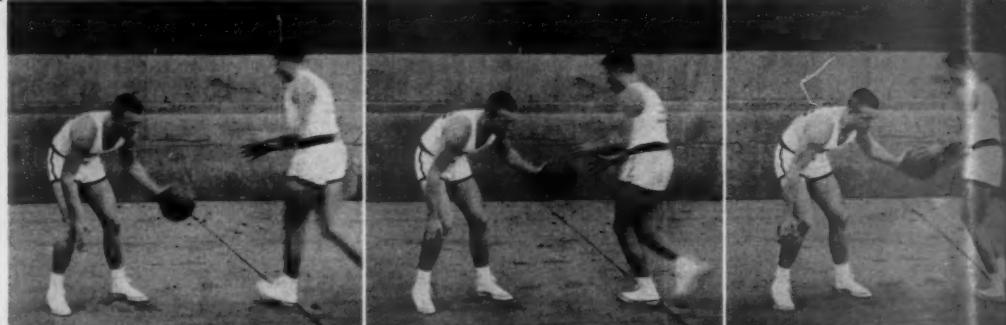
(Continued on page 64)



**One
Handed
Sidearm
Pass
(Low)**



**One
Handed
Sidearm
Hand-off**



**One
Handed
Sidearm
Pass
(High)**

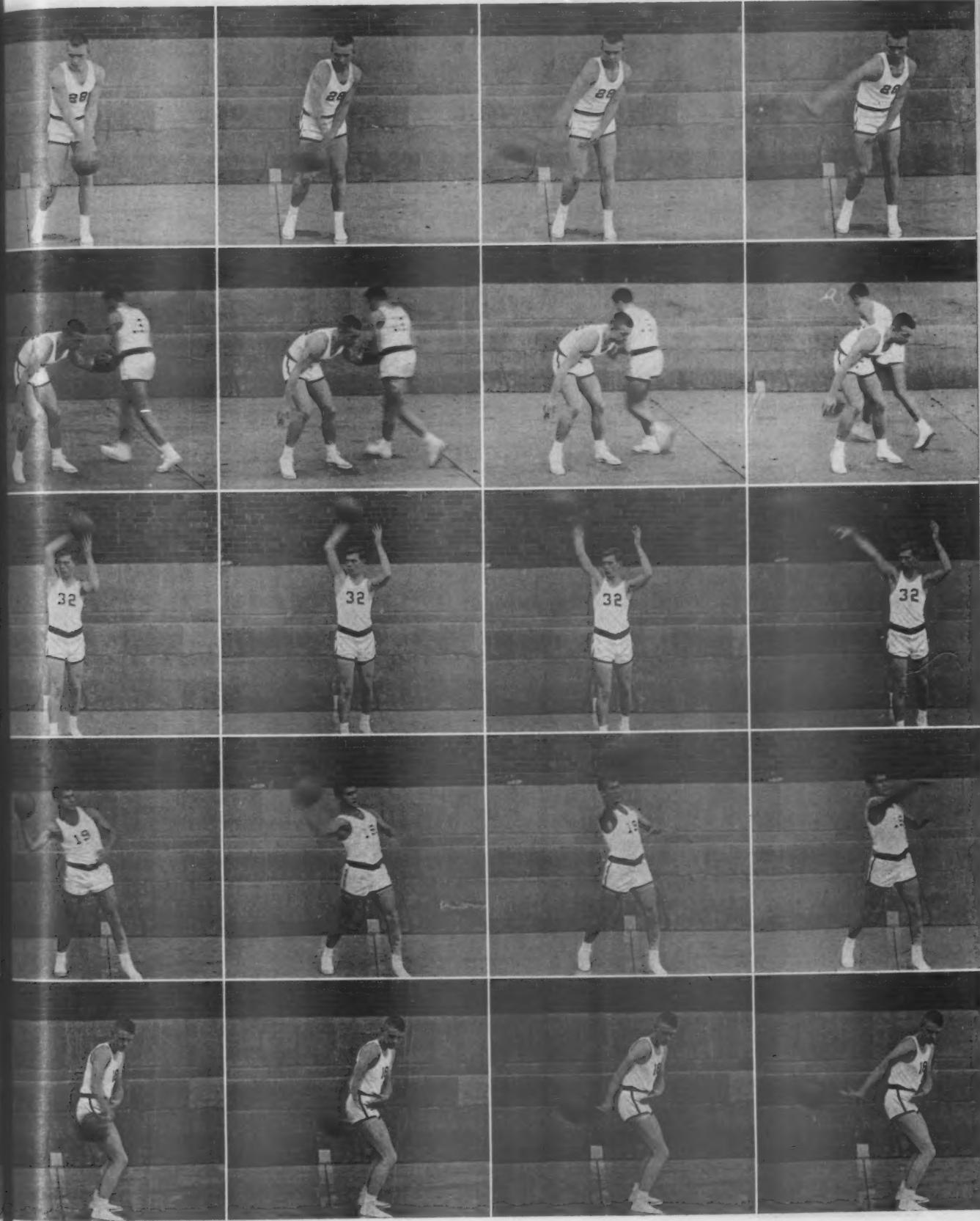


**One
Handed
Shoulder
Pass**



**One
Handed
Backhand
Pass**





**One
Handed
Backhand
Bounce
Pass**



**One
Handed
Backhand
Hook
Pass**



**One
Handed
Sidearm
Bounce
Pass**

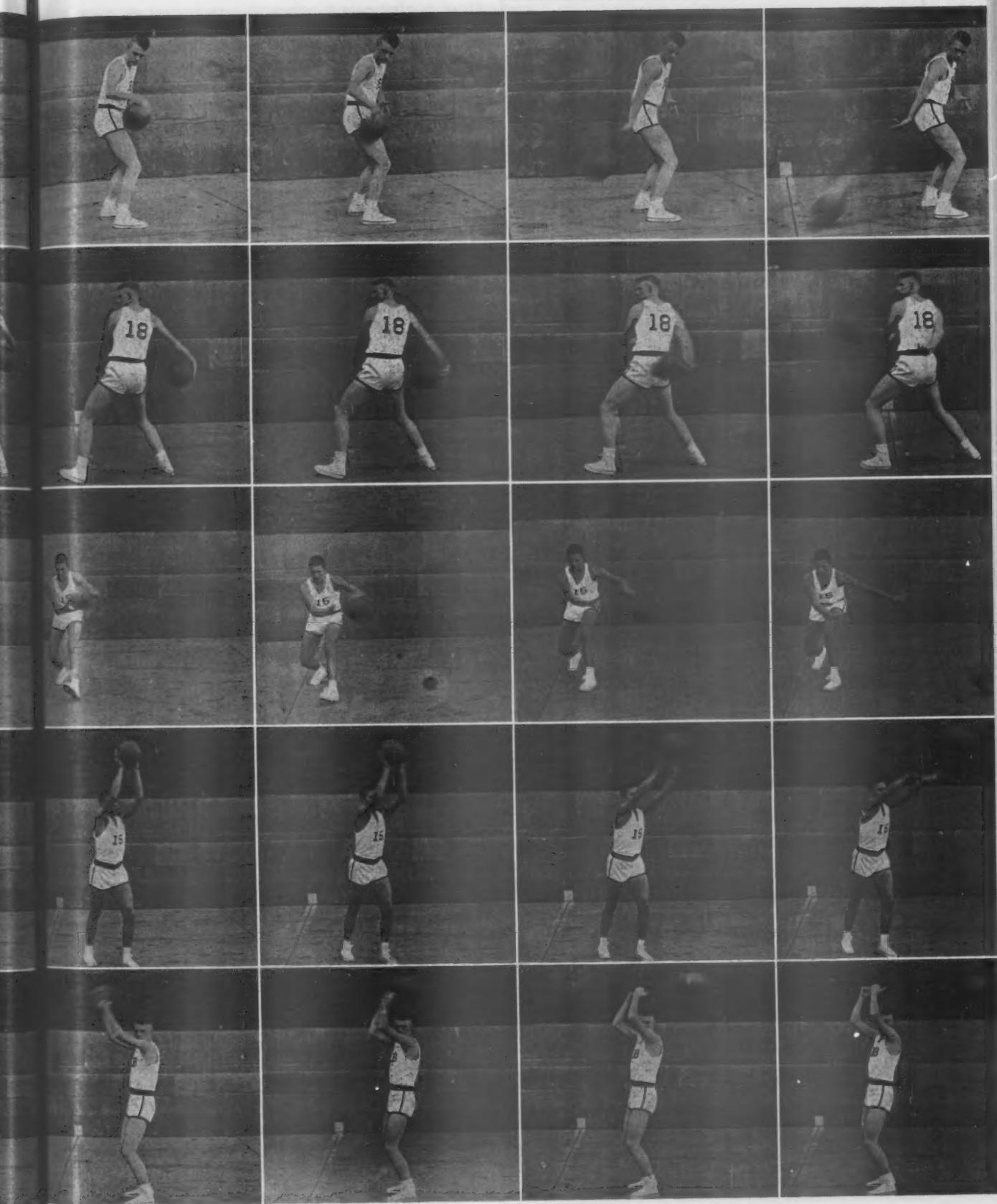


**Two
Handed
Overhead
Pass
Fronting
Receiver**



**Two
Handed
Overhead
Pass
Back To
Receiver**





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Nationwide Amateur Athletics

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Athletics and Physical Education

NOT too many of our readers will remember the bitter fight that raged during the late twenties and early thirties between coaches and physical education instructors. Suffice it to say that the feelings between the two were far from cordial. Competitive athletics was an evil word in the minds of the physical educators while coaches contemptuously referred to physical education as "fits and jerks." The basic argument of the physical education adherents was that by lessening the importance of interinstitutional contacts for the few who participated, more attention both by faculty and students would be focused on physical education where the great majority participated. On the other hand, those men that favored competitive athletics conceded the fact that calisthenics did produce a better physical body, but they contended that because there was no incentive to win or excel calisthenics would cease as soon as the compulsion of the gymnasium ceased.

This situation no longer exists and that it ever did will come as a surprise to many of our readers—so great has been the change in the coaching ranks during the past ten years, with the older coaches retiring and younger men entering the field.

Several factors have contributed to bringing the two groups together. First, there has been a great change in the concept of physical education. Today physical education stresses the teaching of skills. Tennis, golf, swimming and other activities are emphasized. Mass instruc-

tion in these and other sports now comprise a large part of the modern physical education curriculum. In other words, physical educators are following the modern trend in education of preparing the pupil to enjoy life after school days are over.

Secondly, a large number of today's coaches teach physical education. This development was inevitable as more and more state universities added physical education to their curricula. It was only natural for the college youth who had chosen coaching as his career to major in so closely related a subject as physical education. College physical education departments then did the unheard of and added courses in the theory and practice of coaching football, basketball, etc. It may well be that in a few years the coaches will teach no other subject, so pronounced has become the trend. The point is that the coach no longer looks down his nose at the physical education instructor nor does the physical education instructor look down on the coach because the nose is now on the same face.

Whereas the above-mentioned factors have been vitally important in closing the gap and bringing about a closer relationship, we feel that the change of the times has also been responsible. Nineteen thirty-two found this country in the depths of the worst depression it has ever known. The demagogues running for public office struck a responsive chord when they placed the blame for the country's troubles on the bankers and business men. To be successful was to be unpopular and bigness was badness. The argument that if interschool athletics were curtailed there would be more interest in physical education was right in accord with the national thinking. "Tear down the big ones and the little ones will prosper." Furthermore, that period was the period of liberalism. Russia had just been recognized and to think along the lines of Russian thought was the mark of a great liberal. Winning or being successful in life were marks of the capitalistic system and capitalism was certainly under attack.

Today, of course, an adherent of the Russian philosophy is unpopular. Today we no longer believe that the fastest should be held to the slowest and that all races should be a dead heat. Capitalism is much preferred to communism by our people and as, we have often said, competitive athletics and capitalism go hand in glove.

Regardless of what has caused the reconciliation, we are glad that it has happened. Physical education and competitive athletics augment one another in the same way that music appreciation and school-sponsored operas, bands and choral groups augment one another.

(Continued on page 71)

Reach ON RUBBER

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BASKETBALL FUNDAMENTALS

THE PIVOT

By H. E. "BUD" FOSTER

Basketball Coach, University of Wisconsin

IN playing the game of basketball the pivot is important as a maneuver to help the man with the ball. The pivot should be mastered until, like passing and dribbling, it is second nature and the individual player can use it when it is needed without thinking of its mechanics. It can be developed only by repeating it in fundamental drills throughout the season. At Wisconsin we do this as it plays a very important part in our offense.

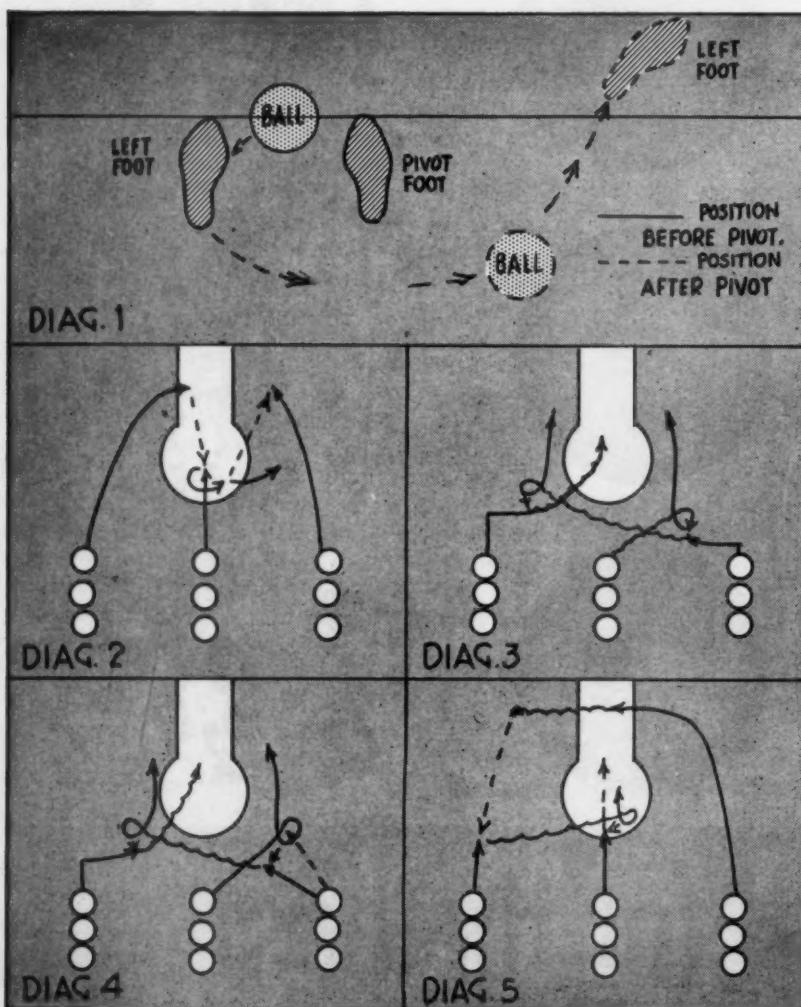
The use of the pivot is most important in protecting the ball from the defense as it places the body as a shield between the ball and the defensive player. It also aids the ball-man in passing, starting a dribble and breaking through a defense. In an offense that uses screens, the pivot will also put a player into position to perform the screen. This phase plays an important part in our game.

There are two ways of going into a

pivot and they depend on the stop the man with the ball makes. If the ball is taken when both feet are in the air or at the same instant that both touch the floor, it is known as a one-count stop; on this type either foot may be used as the pivot foot as long as the feet are parallel. This is the type of stop that we use because it has certain advantages for our type of offense. The other pivot stop is known as the two-count stop and is made by taking the ball with one or more feet on the floor, such as a stride stop. In the one-count stop a player may pivot on either foot, going either to the right or left and he may lift the pivot foot to either pass or shoot. After pivoting and passing he is also in the right position to follow his pass or cut to the basket. In the two-count he is allowed only to pivot on his back foot and must rid himself of the ball before lifting his pivot foot. In this type the player usually pivots away from his offensive basket.

In teaching the pivot that we use at Wisconsin the first step is to get the players to make a one-count stop. We do this by scattering the squad over the court so they have ample room. We then have them take one or two steps and take a short jump, landing with the feet parallel, comfortably spread, knees bending to absorb the slight shock. They should have their body weight balanced equally on both feet. They should repeat this several times to get the idea of the stop and to get them on the jump to keep the feet near the floor so that high jumping is not developed. When they have learned this we give them a ball and let them toss it ahead on a bounce, take a step and a jump, catching the ball in the air before they land. Jumping at a side line of the court will help them land with their feet parallel. As they practice they will find that the more knee bend they use, the quicker they will be able to stop without losing their balance and falling forward. When the one-count stop has been learned they are in a position to pivot.

After making the stop the player may pivot on either foot; the mechanics are the same in either direction. For a



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Illustration 1. The player with the ball has made a one-count stop and is ready to start the pivot. His body is square with that of the defensive man's. Illustration 2. He has pivoted on his right foot by swinging his left foot in an arc of more than 180°. His head and eyes are looking for the receiver. The ball is protected and the weight of the body is on the pivot foot. In Illustration 3 the player has shifted his weight to his other foot as he makes ready to pass.

pivot to the right, the ball is pulled in an arc to the left as the left foot comes off the floor and the weight of the body is shifted to the right or pivot foot. The turn of the body is made partly by a push-off of the left foot and partly from the arm pull; and during the pivot the knee should be bent so that the body is not straight up in the air. As the body turns, the head should come around so that the player can see ahead as the left foot comes down. The finish of the pivot should have the weight still on the pivot foot and the left foot extended as a prop or brace. The head should be turned, sighting ahead in line with the left foot, and the ball should

be held with two hands in a position away from the body. The pivot should be more than a half turn, or more than 180 degrees so that the next move may be ahead (Diagram 1). In performing a pivot to the left, reverse the ball with the arms, the action of the feet and the head swing.

From the position at the end of the pivot the player may dribble, pass, or shoot, if he started his pivot after catching a pass on a one-count stop. If the player has dribbled, taken the ball on a one-count stop and then pivoted, he may still shoot or pass and then follow or cut to the basket. After making the pivot to the right as described, he may

find himself in trouble and can reverse the pivot by pushing off with his prop or left foot, making his play to the left instead of the right.

Use of the pivot and getting reaction from the individual players may be accomplished through the use of drills and repetition. The first drill that we use is a three-line drill where we line the squad into three lines facing the goal (Diagram 2). One outside line is the rebound line, the other outside line the shooting line, and the middle line is the pivoting line. The first man in the rebound line gets the ball off the board, passes to the pivoter who catches

(Continued on page 59)

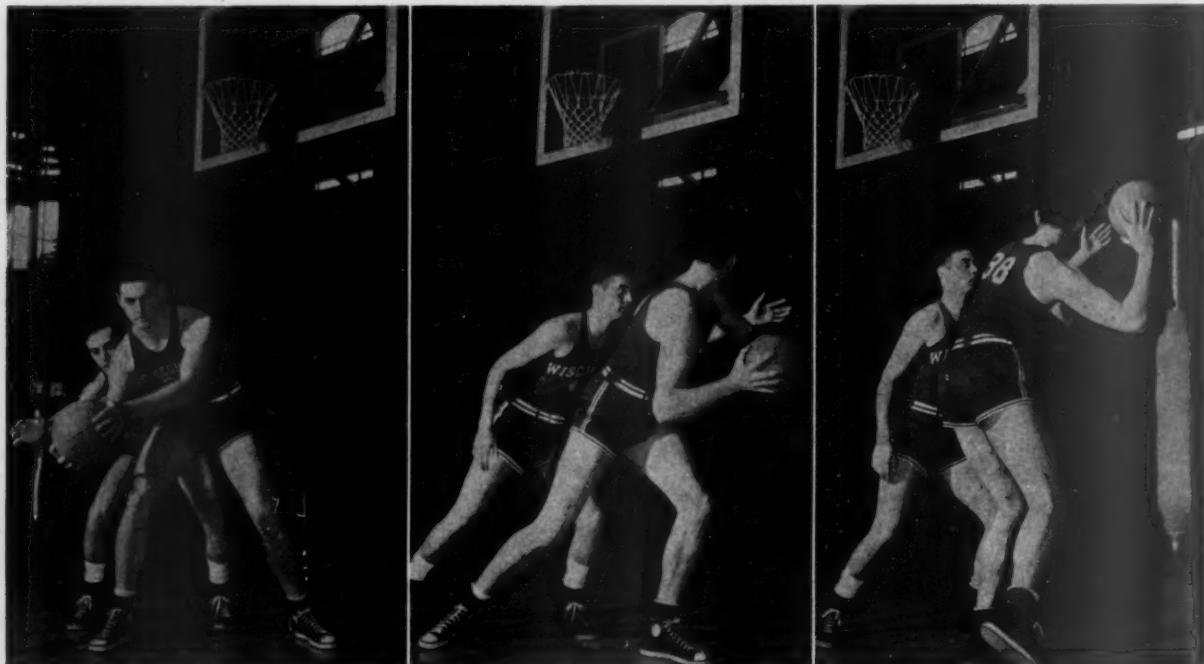


Illustration 1. The player has taken the ball on a one-count stop after moving into the pass. After catching it he has feinted to his right to pull the guard away from the basket. Illustration 2. He has now stepped away from the basket with his left foot to gain distance on the guard. By turning his head and shoul-

ders he can now see the basket. He is starting to pivot on his left foot. In Illustration 3 the player completes the pivot on his left foot, lets go of the ball with his left hand and is ready to take a shot with his right hand. By stepping away he has gained room to turn into the basket for a shot and the turn from the follow-through will allow him to rebound.



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DIAG. 1

The Double Post

By RICHARD CHRISTENSEN

Basketball Coach, Richmond, California, High School

THIS summer I was re-reading my file of basketball literature and after reading Robert Brumblay's article in the November 1948 issue, I decided to send this material in with the thought that I might add a few of our ideas on this offensive pattern. No doubt many other coaches have faced the same problems with regard to material that we did. Richmond had operated from a single post style of play for the previous two years. Last year, however, we found ourselves with one boy 6 feet, 2½ inches and another 6 feet, 7½ inches, both with pivot-post experience. Neither were clever enough as ball-handlers, or fast enough to function with real efficiency at guard or forward. Neither had good set shots or were safe dribblers. In looking over our material, however, we realized that they were two of the most valuable players on the squad. We felt that there was only one recourse—to install a double-post offense against man-to-man defenses. Since both were pretty fair rebounders, we now had good coverage on both backboards at the expense of

clogging the key-hole area somewhat for our faster cutters. Ideally, we should have had good set shots among our three cutters, since the under-basket area was crowded. We suffered somewhat in this respect, since our cutters were good drivers but did not set from outside consistently.

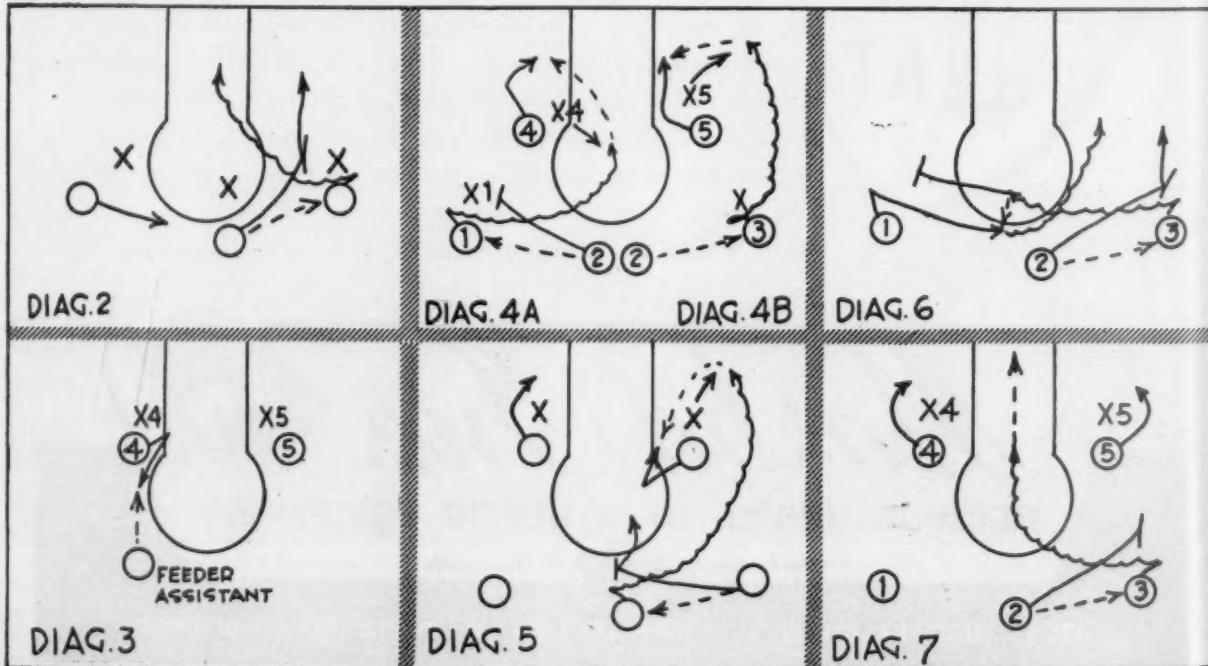
RICHARD CHRISTENSEN directed intramural athletics while in the Navy. He has coached at Richmond for the past four years and his teams have shown steady improvement. In 1945-46 his team won 15, lost 11; in 1946-47 it won 19, lost 10; in 1947-48 it won 21, lost 7 and last year it won 21, lost 6.

Without further discussion of personnel, I will outline our development of the double post. We placed our two post men closer together than is efficient in most cases. This was done because the two boys were not clever dribblers, nor were they clever at the customary pivot moves. Both used the jump shot

which is hard to block, and were fairly accurate in close. Also, since the 6 foot, 7½-inch boy was young and lacked agility, we wanted him in close ready to rebound at all times. In general, I would advise the post men to spread wider to prevent the defense from jamming in so tightly. Diagram 1 shows the starting alignments in our double post.

We use an optional system of offensive basketball. No complex set plays are taught, and only on rare occasions are signals of any type used. We try to set up a general system of continuity to teach the boys to keep moving from option to option without stopping our attack to re-set after each attempted option. The various options are also the drills used daily in practice. This is a standard coaching procedure of course. The timing, footwork, fakes, and shots are therefore learned intimately during practice, which will be used in actual game play.

In general our offense is worked out in three phases—(1) options among the cutters without use of the post men,



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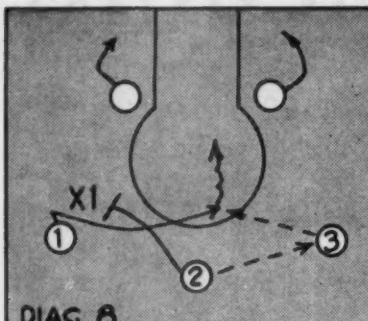
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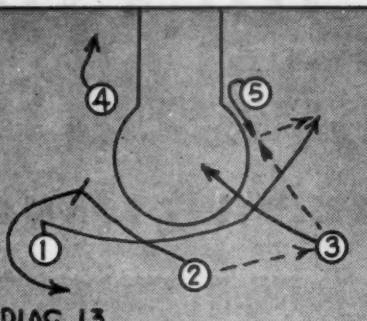
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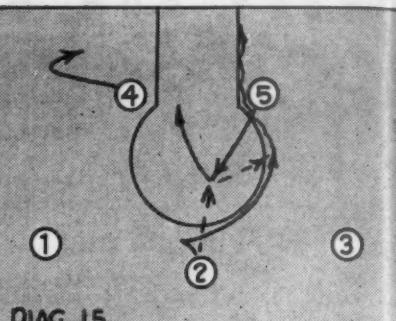
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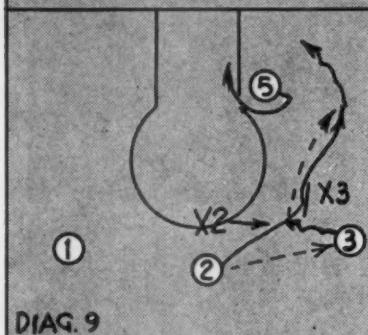
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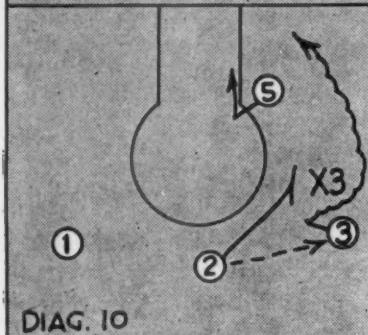
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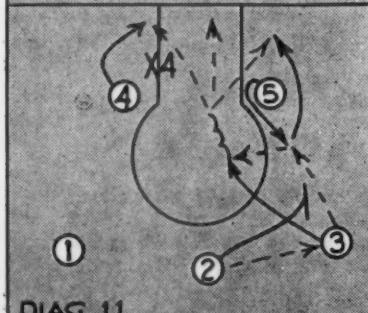
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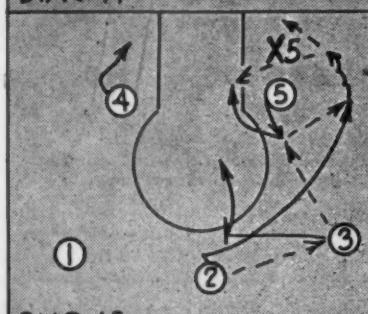
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DIAG. 10



DIAG. 11

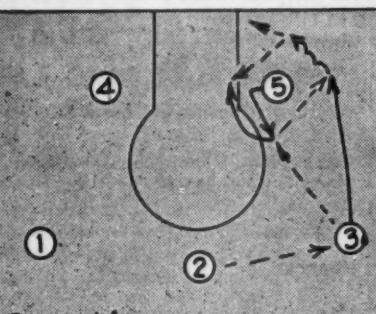


DIAG. 12

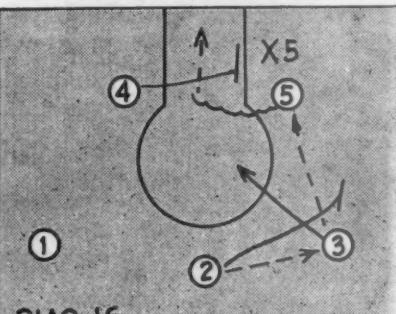
(2) plays with the cutters working off the posts, (3) plays in which the post players team up with each other to get free shots. During practice, the cutters will work on screens, screen-rolls, pass and cut, reverses, etc., with each other. At the same time the centers are working on their pet team-work plays (screen for each other, screen-rolls as defensive opponents switch, double taps). We then combine our cutters and post men for various options (post plays, back door plays, splits, etc.). These various options will be diagrammed. We practice considerably against partial opposition. The cutters practiced three against three using their options (Diagram 2). Usually we had one boy help out the post men when they worked two against two. The two offensive post men lined up with a guard on each. Then one boy assisted by passing in to one of the posts. The post men then tried their options (Diagram 3). After a few minutes the offensive and defensive post men changed. (We had two pairs of post players.) We practiced a great deal on situations where a cutter driving clear into the key-hole (Diagram 4A) or in the back door (Diagram 4B) had to react to a defensive center switching off. The cutter must quickly pass off to the clear post man in this situation. Since a double post results in two defensive opponents near our basket, the cutters in such a pattern must be thoroughly coached in quick pass-offs as the defense switches. In Diagram 4A, 01 cuts clear, off 02's screen, but must pass off to 04 as X4

switches to stop the play. In 4B, 03 fakes and dribbles in the back door. As X5 switches, the flip pass back to 05 results in an easy shot for 05. These situations occur repeatedly when cutters free themselves to drive inside. The cutters must be schooled to dribble hard *with their heads up* and either drive in for the score or react instantly to a defensive switch. This skill is developed in drills like the one in Diagram 5 where there are only defensive men on the post players. The defensive players are told to stop the play as best they can by defensive fakes and actually switching off onto the cutters. Constant practice with this type of drill teaches two fundamental tactics—(1) It teaches the cutters how to fake a pass off and drive through, or to pass off when a switch occurs, (2) It teaches the post men how to clear as a cutter drives in, and how to position themselves for a return pass from the cutter. The above notes give an idea of the type of specialized drills we use in developing double post offensive tactics.

In setting up our plays we try to have the most experienced leader at the 02 position as we start our options. He should be the likeliest offensive leader. 01, 02, and 03 are interchangeable once we start moving. They use a flat figure 8 style of continuity in moving prior to a scoring attempt. We try not to use the flat figure 8 as our main method of getting clear since the defensive players can switch more easily on cross screens. The best scoring plays are off post plays where switching is more dangerous. However,



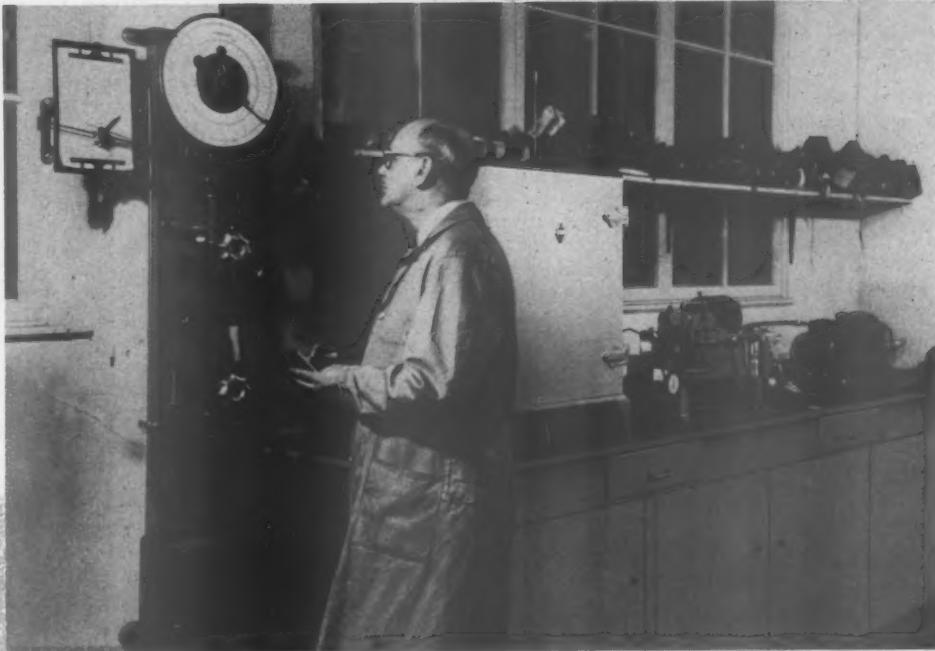
DIAG. 14



DIAG. 16



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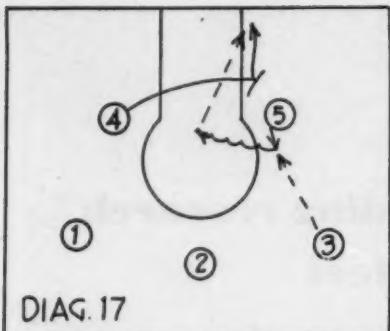
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DIAG. 17

we usually precede the post options with the screens off the weave (Diagram 6). The weave starts as 02 passes to 03 and screens. 03 fakes to the right to set up the screen, then dribbles hard off the screen. If stopped, he passes to 01 and screens. Diagrams 7, 8, 9 and 10 demonstrate the options we use most among the cutters. In Diagram 7, 03 drives clear off 02's screen. Notice that the post men pull wide, *facing the play* for a return pass if X4 or X5 switches to stop the cutter. Frequently 03 should stop at the free-throw circle for a short set-shot. We vary the play shown in Diagram 7 by having the passer screen to the opposite side as shown in Diagram 8. In this case 02 passes to 03 and screens for 01. 01 then takes a pass from 03. Since defensive players naturally shift against this cross screen play, we work on screen-rolls to free the screener as the defense switches. In Diagram 9, 02 passes to 03, screens, and rolls for a return pass as X2 switches to stop 03. We also work a great deal on the individual tricks so necessary in running a weave. Since the defense frequently anticipates the moves in a weave-screen, players should be ready to change their direction as the defense anticipates a screen. The fake shown in Diagram 10 illustrates this point. 02 passes to 03 and screens. As 03 fakes a drive off the screen, X3 starts to fight his way through the screen; 03 then drives in the back door as X3 is caught off balance. These few options should serve to illustrate the type of options we work on among the cutters. However, as stated before, the best plays result when the ball is driven into the post where closer shots are set up.

The next five diagrams illustrate the options we use involving both cutters and post men. In Diagram 11, 02 passes to 03, 03 tries to hit the post man 05 at once, then drives off 02's screen for a return pass from 05. In Diagram 12, 02 passes to 03. Since 02 does not screen, 03 hits the post and screens for 02. 02 drives through for a shot or return pass to 05 if X5 switches off. If 02 and 03 switch on the first screen, 05 may find 02 covered

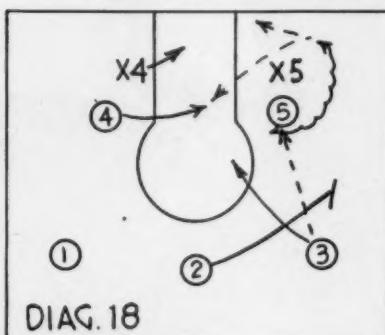
but 03 clear for a shot at the circle. Diagram 13 illustrates the pass-one-way, screen-the-opposite idea and is effective. 02 passes to 03 who hits the post. 02 screens opposite and 01 drives around with semi-delayed timing. One of our simplest options scored as many points as anything we had. Diagram 14 illustrates this simple pass and cut. As 03 receives a pass from 02 he hits the post (05) and cuts. The speed of the cut play is the reason for its success. One forward and one post man teamed nicely on this play, and each scored about equally on it. As 03 drove in he knew that 05 would be right at the junction of the lane and circle after the pass off. He passed back to 05 almost blindly if he met opposition from X5. Diagram 15 is a play which 02 called a quick signal for occasionally as the defense grew used to 02 setting up plays but not hitting the post himself. On the signal, 02 hit 05 or 04 at the circle and drove through on a straight post play as the other post man cleared. These diagrams outline the usual op-

ally. In Diagram 16, 04 screens for 05 as soon as 05 receives a pass from one of the cutters. 05 drives off the screen for a turn or jump shot. A very nice option, especially for a tall man, is shown in Diagram 17. This option uses the fundamental screen-roll technique. 04 drops off his screen, 05 takes one dribble and floats a high pass under the basket to 04. This return pass worked best to our 6 foot, 7-inch boy right under the hoop who often caught it and shot in the same motion. In Diagram 18, 05 uses a turn play to the outside. He either shoots or passes back to 04 as X4 sags off under basket. The two post players should practice the timing, passes and shots for their position during regular shooting practice. Incidentally we had a right and a left hander. The best results were obtained by having the right hander at 04 and the "lefty" at 05.

The foregoing paragraphs explain our general method of attack against the man-to-man defense. Naturally, exceptions to these diagrams were occasionally made. A sagging man-to-man caused trouble because our set shooting was not strong. In meeting this defense, the cutters must work the ball closer and work for good medium-length shots. They should drive the ball into the posts, fake a cut, and come back for short set-shots. Of course a man-to-man that sags a great deal poses many of the same problems as a zone. The presence of two big rebounders near the basket at all times helps the short set-shot game against a sagging man-to-man. Also the ball must be moved fast among the cutters to take advantage of over-sagging and force the defense to check more closely.

We used another maneuver from time to time when we felt that our cutters could not get clear because the center of the court was clogged. The weave shown in Diagram 19 was used, particularly in the second half of the league season after our opponents knew our set-up. It opened up the defense quite successfully on several occasions. 04 and 05 were moved out wide into

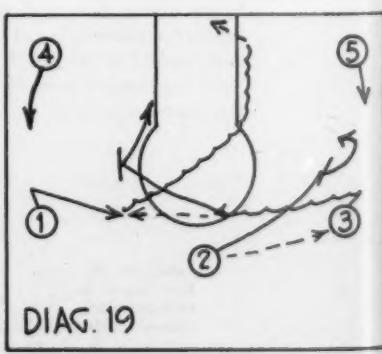
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DIAG. 18

tions we used involving both cutters and post men.

The final series of options are those used between the post players themselves. Any double-post offense should involve close teamwork stunts between the posts. Our post players were told to work by themselves at any time. For instance, one of the cutters might hit 04 and cut. Any of the previous plays diagrammed might be used. The post players, at their own discretion, may also shoot or work a play between themselves. This is much the same as a single post man who has the option of feeding a cutter, or faking to the cutter and himself shooting. Since we play optional basketball, whoever has the ball at any time decides what to do (within the general limits of our play habits). Diagrams 16, 17 and 18 illustrate the type of teamwork plays our post men worked on between themselves. The post men frequently tip each other off on what to do as they first reach their positions on offense, or, after considerable practice, they react to each other's moves automatic-



DIAG. 19

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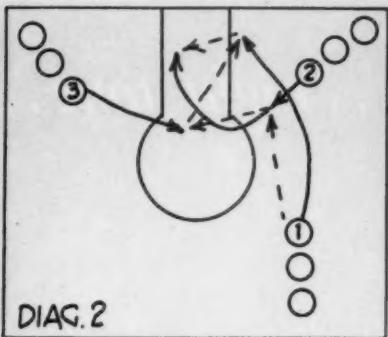
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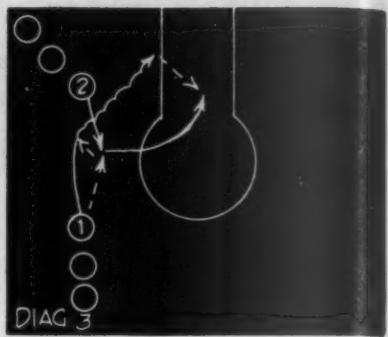
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DIAG. 1



DIAG. 2



DIAG. 3

Practice Suggestions

By PETER PETRICH

Basketball Coach, Red Wing, Minnesota, High School

A TEAM'S performance from game to game will reflect, to a large degree, the kind of practice sessions it has been put through. Too often, after the first few weeks of intensive drill in preparation for the opening game, the practice period becomes one of monotonous repetition. Although repetition of certain fundamental drills has its place throughout the season, it is the game-to-game problems that must be solved during workouts. With a little added effort and planning the coach can overcome the lag that practice takes on as the season progresses.

How often we see a team work the ball into scoring territory and then bog down and lose the ball to the opponents. When a team is repeatedly plagued by such difficulties, and what team isn't, it may indicate that the coach is overlooking the importance of planning his practice sessions. Practice plans that are not made until the players are on the court oftentimes fail to stress the needed improvements which should be covered. By taking the over-all offensive and defensive patterns of play and devising small unit drills out of them, the coach may more readily discover the reasons behind the slow-up in his team's attack.

The basis for formulating these unit drills may be determined from notes taken during a game. An assistant coach should take down the running comments on individual and team play that are made by the coach during the progress of the game. These notes will insure a more accurate means of tabulating data than trying to remember the points in question. Practice plans may be drawn up from the notes. The

talks, half-time discussions and bulletin board material.

Two all-season unit drills I have used are the medicine ball drill and the three-corner drill. The medicine ball, (Diagram 1) in addition to strengthening the wrist and finger muscles, emphasizes the two most used passes in my system of play, the chest pass and the hand-off. One passes to 2 and breaks to the inside. Two then makes a hand-off to 1. One passes to 3. Note: Medicine balls of varying weights may be used for this drill. Increase weight as season goes along.

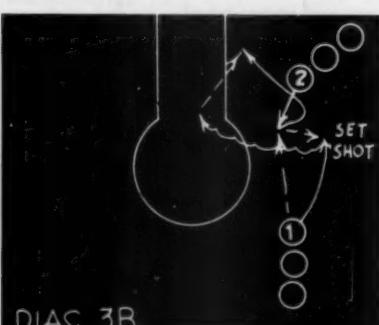
In Diagram 2 is our three-corner drill. This drill is used in both our practice and pre-game warm-up. This drill is a unit taken from our defensive pattern of play and combines many of the fundamental skills that are covered in each practice session. As a pre-game warm-up it helps to adjust players to foreign courts. Regardless of the system used, a warm-up drill of this type may be devised to take the place of the commonly used method of one side shooting and the other side recovering.

Besides presenting a basis for the development of practice plans, the notes prove to be invaluable aids in chalk

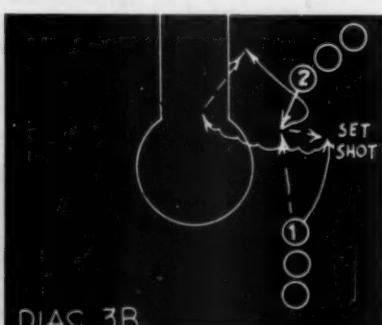
notes should be kept on file and checked through for individual and team errors that are committed time and again. Unit drills should also be checked to see if they are actually designed to bring about the desired improvements in team play.

One passes to 2 and breaks around. Two hooks, backhands or chest-passes to 3, who flips to 1 for the lay-up.

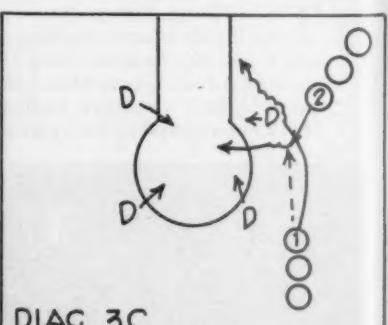
On second round have 1 quick pass



DIAG. 3A



DIAG. 3B



DIAG. 3C

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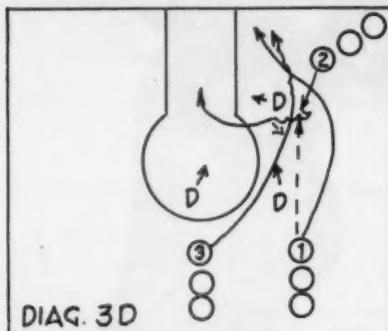
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to 2 who is coming in to recover rebound.

Swing the line headed by 1 to left side of court for the left side lay-ups.

With the line on the left side of the court repeat pass from 1 to 2 for the down the middle lay-ups.

The guard-around play is one of the patterns that is used in our system of play. As the season progressed we found our opponents used various defensive moves to stop the play. To meet this change in defensive set-ups,



we would take up the defense in practice and run through it several times; then we would check for the openings such a move left and would devise unit drills that would take advantage of the opening. In Diagram 3 are a number of the various drills that were used to bring about corrections to meet changing defensive moves. Players will often give out with their own way of out-smarting the defense. Diagram 3 is the unit drill of the guard-around play.

With the defense playing a straight man-to-man we ran the guard around the post man who faked to the inside and made the hand-off to the guard. A variation would be to have the guard, after faking a drive into the basket, hook back to the post man who is coming in to recover the rebound.

By having all the players take both the guard and post position in this drill it will help to get a variety of different techniques in carrying out the pattern.

In Diagram 3A, 1 passes to 2 and breaks around. Two fakes a hand-off to 1 as he comes around, then swings to the inside with one dribble and the shot.

The drill should be used on both sides of the court and lines 1 and 2 alternated. Two may repass to 1 after his dribble.

In Diagram 3B, 1 passes to 2 and breaks around. Two feints an outside pivot to draw the defensive man to the outside and makes a hand-off to 1 who cuts back sharply in front of him. Two then pivots to the outside and can take a return pass from 1 if he is clear for the shot.

One may stop short in front of the

post and take a return pass for a set shot.

Diagram 3C. One passes to 2 and breaks around. Two takes one dribble to the inside and simultaneously bounces it to the outside where 1 is breaking and takes it on the run toward the basket.

Diagram 3D. One passes to 2 and breaks around. Two fakes a hand-off to 1 and swings to the inside with one dribble, stops short and makes a hand-off to 3 who is breaking around. Three may choose to take a set shot from the side if the situation so demands.

In Diagram 3A is the drill used to aid the players when a switch by the post defensive man is made on the guard breaking around. When using this drill a defensive man is put on the post man to simulate game conditions. The use of a defensive man in the drills will stimulate interest because of the competitive angle involved. At the same time the coach can check on the drill to see it is bringing about the desired results.

Diagram 3B is the unit drill used to correct the play when the man watching the guard cuts to the inside of the post and picks up the guard after he has taken the hand-off from the post. A variation of this drill is to have the guard stop short and use the post as a screen for a set shot from the side court.

Our post man on the left side of the court was a good faker and could feint an outside pivot and break across the key to the inside for many baskets. The defense would play the front men loosely and drop back whenever the ball was passed in to him. This left an opening which we worked on to take advantage of this defensive move. Diagram 3C shows the unit drill we used in practice for the counter attack.

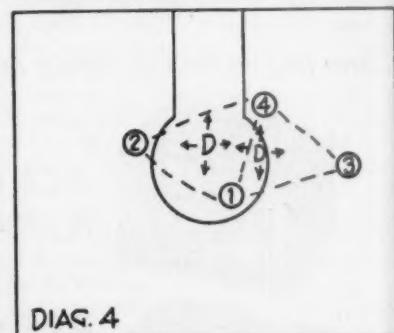
Another drill we used to overcome the defense that fell back to plug the center of the court is shown in Diagram 3D. We call this the double guard-around pattern. To vary the attack sometimes the first guard-around would go to the outside as in the regular pattern or we would have him fake to the outside and cut to the inside putting added pressure on the defense to keep them to the inside.

These are but a few of the various types of unit drills that may be devised to help make the practice session interesting and constructive. Since each game brings out needed changes that must be made before the next game is played, the practice plans may be carefully worked out from the notes taken in the previous games. It follows that this added effort in planning the practice will pay off in team performance and confidence.

After competing against the first zone

defense, our notes indicated a tendency on the part of all players to hold the ball too long before passing and, at the same time, they failed to recognize when they had the defense overshifted. A drill we used to help correct these faults is shown in Diagram 4. By placing two defensive men in the drill we could check both the faults we wanted to correct and at the same time give the players on defense a chance to understand the shifting of the zone more clearly. The players should be rotated on both the offensive and defensive phases of this drill. If a defensive player was repeatedly guilty of having his back to the ball, we would instruct the offensive players to bounce the ball off his back. This drill also has value in improving split vision.

The unit drills that are devised from one's over-all offensive pattern will help the players understand the system of play better. To check how well the players have mastered the skills involved, the coach should have them run through the offensive patterns without any opposition and then call the defensive switch and have them play accordingly. After a time of this practice he should assign one defensive man at a time to one of the offensive players until all five men are covered. The coach may withdraw the defensive man if he finds that one of the offensive five are forcing the pattern of play. If the players on offense can carry out his assignment in the unit drills the change-over to the over-all pattern should not be too difficult. I find that a player who has not fully understood the unit drills carries the same confusion to



practice scrimmages and games.

Another method of checking on the unit drills and seeing how they fit into the over-all pattern of play is to have one player at a time go through to be on the scoring end of the play. After one player has made good on five or so variations, have each of the other four rotate and complete five variations from their position. While the one is completing his variations the other four have to understand what drill unit he is completing. This will help the team to

(Continued on page 66)

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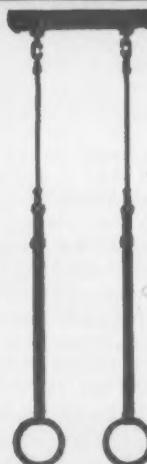
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The Standard Basketball for 1950-51

By JOHN W. BUNN
Basketball Coach, Springfield College

THE action of the National Basketball Rules Committee at its meeting last March in Seattle brings to a close one phase of a long controversy regarding standardization of equipment. It also focuses attention on the superstition and prejudice of coaches and players. Beginning with the season of 1950-51, only the molded type of basketball will be official.

For many years the National Association of Basketball Coaches has carried on an aggressive campaign for the adoption of a single standard for each type of equipment. This body has always advocated the sewn type of ball. It seemed almost heretic, therefore, to find it (primarily college coaches) voting strongly through its annual poll and on the floor at its last convention for the molded ball.

A survey three years ago indicated that less than half of the members of this organization used or favored the molded ball. The vote last March was 3 to 1 in favor of this same ball. The expressed reasons for this change of position were the dissatisfaction over the present quality of the sewn ball. There was a general feeling that new round balls were an exception and that an apparent lack of uniformity of materials and high grade workmanship caused these balls to fail after very short periods of use. The above feeling was so strong even among the staunchest supporters of the sewn ball that a recommended change by this body was inevitable.

There remained, however, the deep-seated conviction that the molded ball would change playing conditions. It was conceded that it would hold its shape and wear longer but all but a few were convinced that it was a livelier ball, than the sewn ball. Consequently the coaches felt that players who had not used the molded ball would experience difficulty in dribbling, that the ball would rebound from the floor much faster and that rebounds from the backboard would be higher and the ball would rebound a greater distance from the basket. They also felt that the feel of the ball would be different, it would have a slicker surface and be more difficult to handle and players, therefore, would be faced with the task of readjusting many of their playing

habits. Many coaches feared that the adverse emotional reaction which some would undergo might even destroy the playing effectiveness of their boys.

I must confess that I shared some of these thoughts. I was curious enough, however, to explore the validity of as many of the above points as possible. In addition I was skeptical of the claim that the molded ball was a livelier ball than the sewn ball. The fact that the resilience of all official balls is standardized by the rules seemed to deny this point. Each ball to be official must be inflated with sufficient pressure to cause it to rebound, when dropped upon a solid wood floor from a distance of six feet from the lowest point of the ball to the floor, to a height of not less than 49 inches and not more than 54 inches when measured to the top of the ball. (Rule 1, Section 12)

Two lines of investigation were followed to establish or deny the above statements. The first was an experimental study to determine the relative liveliness of balls. Mr. Floyd Wilson,¹ assistant basketball coach at Springfield College and now at Harvard University in the same capacity, carried out a cinematographical analysis of the rebound of three types of balls for the purpose of determining the difference in the speed of rebound of each. He studied the sewn laceless ball, the molded ball and a rubber ball. This work was done under my close supervision.

Each ball was standardized to the extent that it was inflated to the pressure stipulated on the ball. The following results were obtained when each was dropped from a height of six feet to the same solid wooden surface:

Ball	Pressure	Rebound
Laceless	13	51½"
Molded	8	49¼"
Rubber	7	50"

It will be noted that the reaction of each is within the requirements of the rules.

The balls were then played against a backboard from directly in front of the backboard from an angle of 60 degrees and an angle of 30 degrees. Both a two-hand push pass and a one hand pass were used. The experimenter stood at a distance of twelve

¹Wilson Floyd, Unpublished Thesis, 1949.

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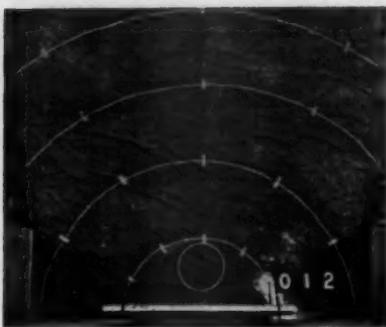


Illustration 3

feet from the backboard. Seventy-two trials were made with each ball.

The difference in the speed of the balls going to and from the backboard and the difference in the angle which the balls made in going to and from the backboard was measured.

A 16 mm. motion picture camera was used to record the action of the balls. The camera was suspended directly above the basket at a distance of approximately 40 feet (Illustration 1). The speed of the camera was calibrated before and after the tests. This was done by photographing the fall of a shot from a height of sixteen feet and then counting the number of frames exposed during this action, by means of the formula $S = \frac{1}{2}gt^2$ which applies to a falling body. It was determined that 99/100 seconds was required for the shot to fall sixteen feet.

$$S=16 \text{ feet}$$

$$g=32.2$$

$$t=\text{time}$$

It was found that 63 frames were exposed during the time required for the shot to fall. Thus, by dividing .99 by 63, we find that the speed of the camera per frame was .016 seconds. This technique is shown in Illustration 2. The tension on the spring mechanism of the camera was the same at the beginning of each action shot during the calibration procedure and during the actual experiment.

To facilitate the measurement of the distance of the ball from the backboard at any moment and the angle of flight with respect to the ball, arcs of 3, 6, 9 and 12 respectively were laid off on the ground from the backboard. These arcs were then marked at 90, 60 and 30 degrees. This layout is shown in Illustration 3.

The pictures which were taken were carefully studied. The speed of the ball going to and returning from the backboard was determined by counting the number of frames of film which were exposed in the process. A hand operated projector was used for this purpose. The angle of flight was mea-

sured by first marking the position of the ball in each frame when it was projected on white drawing paper. The results of this technique are shown in Illustration 4. By means of a constant reference point on the image on each frame, the position of each projection could be held the same. Each of these points was then connected and the angles measured with a protractor.

Since the difference in the action of each ball was the object of the experiment, the data which was obtained in this fashion was treated statistically to determine the relative difference of the reaction of the balls. Critical ratios were calculated as a means for interpreting the differences.

The results obtained are startling in view of the current opinion of coaches. For any difference to be significant, the critical ratio must be equal to 3. It will be noted from the table below that in every case, the critical ratio was less than one and with three exceptions was less than .5. Therefore, one must conclude that when any of the three balls is inflated in accordance with the re-

JOHN W. BUNN attended the University of Kansas where he won ten varsity letters in football, basketball and baseball. He coached nine years at his alma mater before going to Stanford where his teams won three Pacific Coast championships. He was elected president of the National Association of Basketball Coaches for the current year. He was influential in bringing about changes in the rules credited with speeding up the game and increasing its popularity.

quirements of the rules to produce a uniform resilience, there is no significant difference in the reaction of any of them. If one studies the actual differences as presented in the table (these differences are in terms of number of frames), he finds no difference in speed in excess of .03 of a second. Likewise, there is no consistency in the trend of the differences which do occur. In other words, no one of the balls tested is any livelier than the other. Rebound and dribble conditions would not vary significantly from ball to ball. From the standpoint of the laws of physics, this is exactly what one would expect. If the resilience of two objects is the same, the mass is the same, the speed is the same and they are thrown against the same barrier, each would react identically.

In a similar manner, the angle of rebound and the difference in spin of the rebound were studied. Suffice it to say, the results from these analyses were comparable to the results obtained from analysis of the velocities of the balls. In the case of the angle of re-

bound as compared to the angle of approach of the ball to the backboard, results were exactly the same for each ball. In each case, the angle of refraction was equal to the angle of reflection.

The other phase of the investigation dealt with a survey of experiences with the laceless sewn ball and the molded ball. As previously stated, a little less than half of the colleges surveyed three years ago indicated that they were using the molded ball. With very few exceptions the high schools are using the molded ball. The state of Indiana is a notable exception. The reports from this state indicate that preference is shown for the sewn ball. These facts would suggest that no great problem of readjustment on the part of the player would be occasioned by the adoption of the molded ball as official. The high school boy who goes to college is in most cases already accustomed to the molded ball.

Finally, the problem of ball-handling was explored by inquiry. The writer was of the opinion that the molded ball would prove harder to hold because it would not absorb moisture as readily as the sewn ball. The carcass of the molded ball is vulcanized and the cover consists of comparatively thin strips of leather.

Upon inquiry among college coaches, however, it was surprising to find that they were about equally divided in their opinion concerning the slipperiness of the two balls under game conditions. A friction test of the two balls under varying degrees of moisture on the surface of the balls would be a very worthwhile research problem.

One must conclude from the above that there is no significant difference between the various types of balls so long as they meet the standards set by the rules. Therefore, the change in the rules for 1950-51 should not affect playing conditions. Since all teams will be using exactly the same type of ball, the mental hazards should in time be removed entirely.

(Continued on page 38)

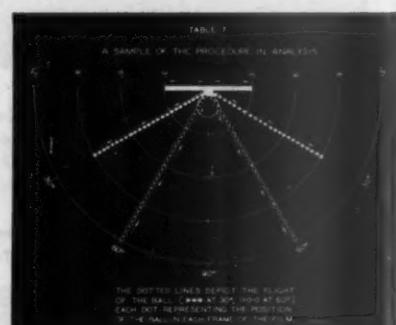


Illustration 4



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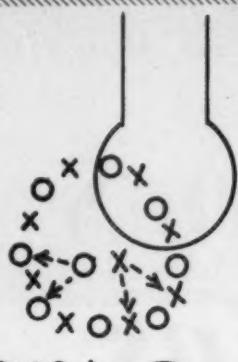
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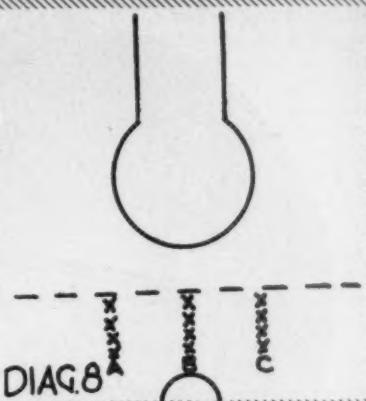
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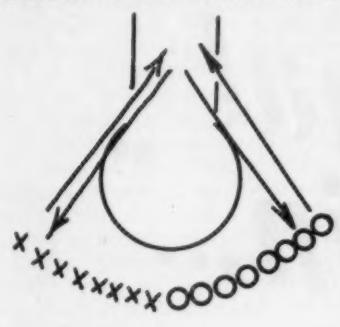
DIAG. 1



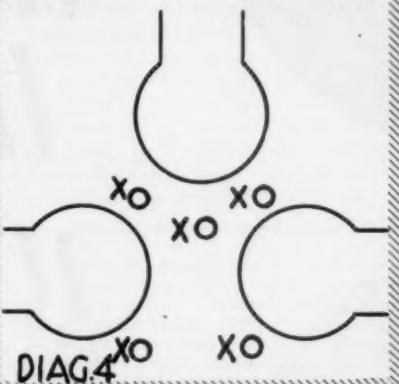
DIAG. 2



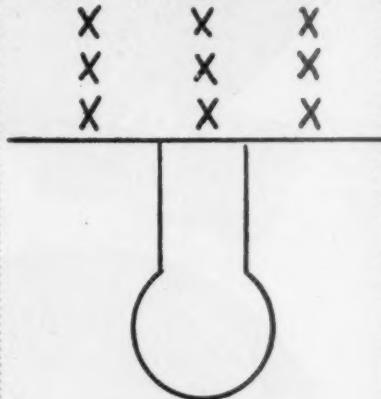
DIAG. 8



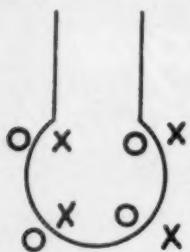
DIAG. 3



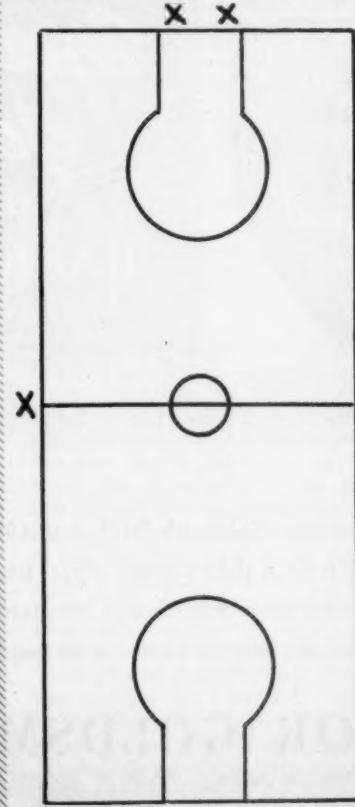
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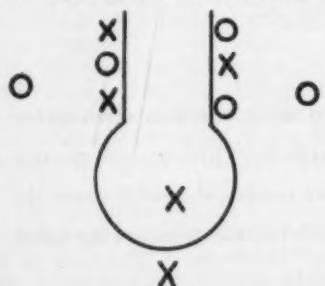
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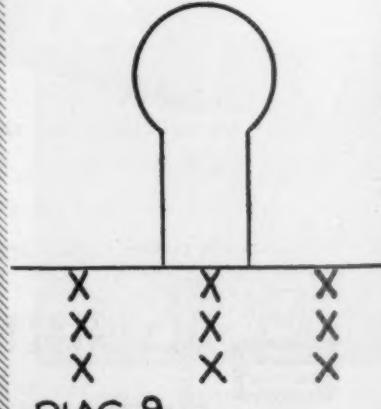
DIAG. 5



DIAG. 7



DIAG. 6



DIAG. 9

Basketball Drills with Game Opportunities

By RALPH E. BILLETT

Basketball Coach, University School, Columbus, Ohio

BASKETBALL drills are integral instruction methods both in physical education classes and in varsity basketball practice. Frequently, they are general drills used to teach fundamentals or they are drills devised to meet the teaching situation or the offensive and defensive style of team play. In either case they are offered in order that skills may be permanently retained and may become automatic and mechanical in their execution to insure a high degree of perfection in game performance.

Basketball squad members are, without exception, interested in the activity being practiced and are eager to improve their skill. They do not, however, experience satisfaction and a sense of achievement until the skill is established. Skills incorporated in simple games and relays provide an immediate sense of achievement and satisfaction which off-set the delay of satisfaction gained through skill perfection. This type of drill is conducted in a way that is both interesting and pleasing to the participants and is an important device during basketball sessions.

The physical education classes present many more variable factors than the basketball practice situation. The broad range of skill and interest in the activity, the differences in desires to reach certain levels of accomplishment, and the degrees of instruction resistance are some of the problems encountered. Here the drill with game opportunities can be used to greater advantage and frequently is not identified as instruction to be resisted and the remaining teaching problems are readily approached.

Advantages of Drills With Game Opportunities

Drills with game opportunities are not intended to replace the fundamental drills but should be an additional instructional device. Some of the advantages seen in this type of drill are:

1. Add the element of a game to the large number of participants of a drill.
2. Sustain interest in the drill by game opportunities.
3. Effective means of overcoming instruction resistance.
4. Afford a change in instruction to revive interest. Especially useful in basketball practices when "staleness" sets in.
5. A closer approach to the real game situation.
6. Give initial satisfaction

of play and practice even though drill perfection is not realized.

It is felt that the advantages of this type of drill outweigh the disadvantages. The problems involved in using drills of this kind may be anticipated from the following disadvantages:

1. The inclusion of a game situation may cause the skill to be performed hurriedly and consequently incorrectly. (It is important that a good model of correct form and technique is set for the students to imitate. Equally important is the practice of halting the drill to make corrections.)
2. Instruction during the game is difficult due to the greater interest of continuing the activity. (Insistence upon attention when the activity is halted for correction is most essential.)
3. The type of drill requires greater coverage due to maximal participation and the addition of game situations. (More careful planning and organization of the activity is necessary to insure adequate supervision.)

Fundamentals Stressed in Drills

The following ten drills have been used in physical education classes and in varsity basketball practice situations and were found to be successful activities. The game fundamentals "sugar coated" by the game situation are the point of emphasis throughout play.

Catch-Up Drill—Passing (Diagram 1) Players are placed in a circle in two teams (Colored Shirts). One player from each team is placed in center. These players pass the ball to their team mates around the circle and attempt to complete the circle passing first. Various passes may be used in the drill and the center man changed after every complete circle-pass. The drill may be varied by having the teams dribble around the circle instead of passing.

Three-on-Two Drill (Diagram 2) Two teams are lined outside the side lines of the basketball floor. Three players come out from one line near

RALPH E. BILLETT spent five years in the Army Air Force as a physical training officer. He received his MA in physical education at Ohio State University. In addition to his coaching he teaches physical education courses.

mid-court and advance the ball against two players coming out from the other team. Each team alternately sends out players on offense and defense. The ball is scrimmaged until a score is made or a time limit is reached. Fouls are called and free throws attempted. After score or time limit, the players return to the end-line of their lines. The sideline players may be used by team mates when they are stuck with the ball.

As a variation, each team member is numbered. The instructor calls a number and rolls the ball in the playing area. The players scramble for the ball and attempt to score. They may pass to their side line when they need help. Team scores are kept.

Shooting-Over-Defensive-Man Drill (Diagram 3) Two teams are arranged in a semi-circle in front of the basket slightly beyond the free-throw circle. The players most distant from the center of the floor start the drill for their respective teams. Each shoots one set shot and rebounds the ball. They then pass to the next man in their circle on their team and rush him with one arm up so that he must shoot over the defensive man. This is continued throughout the game as each player takes his turn at set shooting. Individual score as well as team score is kept. This drill may be run against time or a definite game score may be set. A basket may be counted five or three. Players are switched so that they do not have same angle shot every time.

The game of "21" may be played from the same formation by dividing the group into four teams. The variations of "21" known as 5-3-1 may also be played. Each player is given three shots with the three mentioned values. The second shot must be shot from the spot of rebounding while the third shot may be taken under the basket.

Keep Away — Passing and Cutting Drill (Diagram 4) Two teams line up as at the start of a regular basketball game. The team obtaining possession of the ball from the toss-up is required to complete five or any designated number of passes after which they are allowed to shoot at any of the three baskets on the half court. More than five may be on a team or the team may be changed after time limits are reached. After a missed shot five more successful passes must be made to win another shot. Passing between the same two players to gain the required number

of passes is not allowed. A player fouled is given the ball out of bounds and awarded one additional pass. Foul ing in the act of shooting may either be penalized by awarding the appropriate free throws or by awarding the field goal. Held or jump balls cancel the successful passes and the team must start anew.

Several variations of this "keep away" drill may be used such as one requiring only passing and not shooting. Points are awarded the team completing the required number of passes. Another permits shots at a team's basket only after the required successful passes are completed. Still another is the "circle keep away" in which small circles are formed and a player in the center attempts to intercept passes across circle.

Jump Ball Drill (Diagram 5) This drill is somewhat similar to Drill 6. The drill starts with a jump ball and then the two teams scrimmage on one half of the court and shoot at the same basket. Jumpers are rotated so that all get an opportunity to jump. Free throws are shot as in a regular game, but violations and out-of-bounds balls are brought back to jump-ball position.

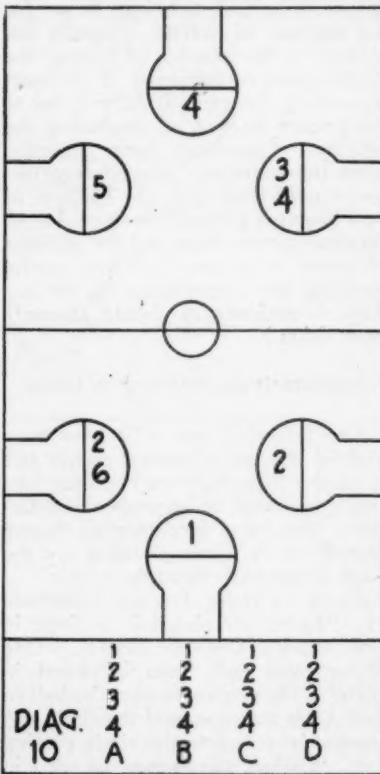
Drills Have Options

Free-Throw Drill (Diagram 6) Players line up at the free-throw line as they would in shooting throws in a regular game. Each team has its players numbered from one to five. Number 1 of team A shoots first. He continues to shoot free throws and score points for his team until he misses. Any missed free throw is then scrimmaged at the one basket. The scoring team is awarded two points. Number 1 of team B gets his turn at the free-throw line. This alternating is carried on throughout the game. Fouls committed during the scrimmage may be handled several ways. The free throws may be awarded, or the ball may be taken out by the opposing team if the fouling doesn't become flagrant or deliberate, or players foul ing may be sent off the floor to a penalty box for a required period of time. To promote more free-throw shooting in the drill, all jump balls, violations, and out-of-bounds balls may be brought back to the free-throw line for the next player to take his turn at taking free throws.

Man-to-Man Individual Offense and Defense Drill (2 on 2) (Diagram 7) Four lines of players are arranged on the floor as shown. Two players move from lines under the basket with the ball and attempt to score against two defense men coming out at mid-court (one from each side of floor). Upon losing the ball the two offensive men

become defense and the defensive men take the offense. When play is halted they return to the ends of their lines and the next four players come out. The score of the two teams is recorded. Play may be halted at the end of a time limit or number of ball possessions or points may determine the time of play for the group.

Shooting and Rebounding Drill (Diagram 8) Teams A, B and C line up as in Diagram 8. A team starts the drill with the first man in line taking a set shot. The first men on all teams rebound the shot and then scrimmage the ball until a goal is scored or a time limit is reached. If the set shot is made, the three players go to the end of the line just as they do after a field



goal is made by rebounding the shot. When a player is stuck with the ball by poor defensive position or having taken his dribble, he may pass to his line and receive a return pass. The three teams competing take turns shooting the set shots. It is conceivable that some players will not get a turn at set shooting so some inter-team switches may be made to correct this situation. Balls going out of bounds stop the play and the ball is returned to the next three players to be placed in play again. Free throws may be shot or the ball may be returned to the shooting line to resume play. Five or three points may be awarded for the set shots with two for the rebounded field goal or the

same points may be given for both scores. Individual score is kept as well as team score. The drill may run against time or to a predetermined score.

Man-to-Man Individual Offense Defense Drill (Diagram 9) Players are deployed in files as indicated in the diagram. Three players take the ball on offense against three defensive men coming from opposite ends of the floor. The same rules are followed as in Drill 7.

For greater participation, two teams may play on each half court. In this case, whenever the ball changes hands in going from defense to offense, it must be dribbled or passed beyond the free-throw line before the offense may function.

Two-On-Two Practice

Count Them Drill (Diagram 10) Four lines of players are formed as shown in the diagram. On the whistle, two men of A oppose two men of B. The ball is rolled toward the first man of these files who scramble for possession to determine who is going on offense and defense. The man getting the ball and his team mate go on offense while the other two go on defense at basket number 1. The object is for one of the pairs to get the ball, score, and then move on to the next basket. Ten or fifteen seconds are allowed for the score after which the whistle is blown. The blast of the whistle sends the first pair to the next basket (even if a score has not been made) and a ball is rolled toward teams C and D for the first two men in those files to secure the ball. At successive intervals the whistle is blown and players come out in fours until all available baskets are used. After playing at the last basket the players return to their respective teams. Each team records the number of baskets made. Held balls are tossed up by the players and on fouls the opposing team takes the ball out of bounds. If a basket is scored before time is up, the group waits on the whistle to move to the next basket, and the team scoring becomes the defensive team.

The Standard Basketball

(Continued from page 34)

Two suggestions have evolved from these studies. 1. The officials should always check the bounce of the ball which has been provided for the game. 2. Schools should provide facilities marked for this purpose. No appreciable difference could be found between the three types of balls.

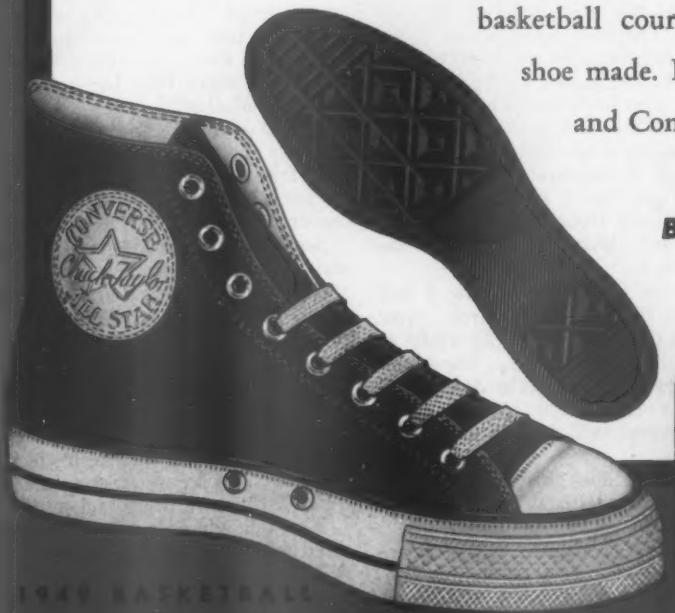
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The Pre-Game Warm-Up

By Clair T. Blikre

Basketball Coach, Tioga, North Dakota, High School

BEFORE long the basketball season will be in full swing, another season of success or failure, as the fans put it, for a great many coaches.

We continue to read articles on how to prepare for the coming season, how to develop the fundamentals, the offense and defense for the particular material at hand, but yet there is very little written on the pre-game warm-up. In my mind this warm-up is as important as the defense or offense which I will use, because the boys must be in the right condition, mentally and physically, to play top basketball. This is achieved only with help from the coach—to a large extent, he determines how they shall respond.

First of all, the warm-up should be short and concise. Too often one sees a basketball squad take the floor, some walking and some running, and remain there for thirty minutes or longer. This is, in my estimation, a mistake. While the boys are out on the floor there is no organized warm-up; some do this and some do that—usually shooting shots which they will not use in a game. The boys are sweaty and grimy by the time they go in the dressing room to receive last minute instructions.

This is our warm-up method which we use prior to every game regardless of opponent.

A. Three minutes of exercises in the dressing room using the following exercises:

1. *Body Turns and Arm Movements.* Body turns with the hands on the hips. The players should alternate turning the body left and right, turning at the waist, with the head and legs remaining forward. The players should bend forward with their knees remaining stiff, hands touching the toes; then they should swing their arms back overhead reaching as far back as possible, always keeping their knees stiff. They then place their hands back rapidly on their hips.

2. *Knee Bends.* To begin the players should do a three-quarter bend (five of them) to loosen up the muscles in the legs gradually. Following this they should begin the full knee bend (rocking on the first one several times). The boys should do about ten of these.

3. *Running in Place.* The players should run in place swinging their arms rhythmically, turning the head left and right a few times, and lifting their knees as high as possible, landing on the balls of the feet.

In this way the boys have completed their exercises in only three minutes. They are now loosened up and ready to go out on the court for their lay-up shots, set shots, free throws and passing drills.

We send the boys on the floor in an organized manner. They line up behind the captain, go out on the court and immediately go into a snappy warm-up drill which includes most of the fundamentals—passes, lay-up shots from both sides and straight in, and rebounds. This drill which I found to be the most practical and which I plan to use again this year is as follows:

The players form three lines at the ten-second line. The first line is along the right side-line, the second is in the center and the third is along the left side-line. The first player in line 1 (the captain) dribbles straight ahead toward the corner. He passes to the first man in line 2 who has come out to receive the pass. This man shoots. The first man from line 3 takes the rebound and passes back to the second man in line 1. Players from line 1 go to the end of line 2; players from line 2 to the end of line 3 and players from line 3 to the end of line 1.

After this is completed, line 2 will dribble to the free-throw circle, pivot and pass to one side or the other as designated by the captain. The opposite side rebounds. This is done so all will shoot from both sides and the middle group will be pivoting both ways.

Line 3 now does the same but from the opposite side from which line 1 began.

From the explanation of the warm-up drill, one can see that there is continuous action; that the pivot is used, and last, but surely not least, the lay-up shot from both sides and straight in is used.

We have the players practice the shots they will need for their position. (I use the fast break when possible,

but rely mainly on set plays; therefore each player has assigned tasks.) Each player will shoot shots as explained:

1. The Center

- Shots from all around the free-throw circle—faking one way and shooting the other.
- Tip-in shots.

2. Forwards—Right and Left

- Shots from the side—only the side on which they play and never beyond the 10-second line.
- Drive-in shots.
- Dribbling in and shooting from around the free-throw lane (one-hand shots).

3. The Guards

- Two-hand set shots.
- Drive-in shots.
- A few shots from the sides of court, within the 10-second line and in the corners.

The first five players shoot five free throws per boy. After each shot they back up a step or two and then place themselves back on the line for their next attempt. (Each player is required to shoot the underhand free-throw, keeping his eyes just to the front of the rim, imparting a little backspin on the ball). The other four boys line up on each side of the free-throw lane.

While the above group are shooting their free throws; the second five players are using the peripheral vision passing drill.

So ends the before-game warm-up and the boys run back in the dressing room. They are back in the dressing room fifteen minutes from the time they started their exercises. All the boys take seats immediately and receive last-minute, re-emphasized instructions. While I am giving these instructions the student manager passes the Firm-Grip around to all who desire to use it and the five who are starting the game take off their warm-up jackets.

The following should be re-emphasized while the boys are seated:

- The tip-off play to use.
- Types of plays to use on offense (They are designated by number).
- Type of defense to use. In our case, we use the pressing man-for-man so the opponent which each boy will take is again stressed.

4. Short pep talk.

Now the boys are ready to go on the floor and begin the game. Using the aforementioned method of warm-up it has been found that the boys are properly warmed up, and yet are not tired in the least. This is just how we want them, warmed up and ready to go! While warming up, the boys should not shoot a single shot which they will not use in a game. I have not deviated this form of warm-up even when playing on

(Continued on page 64)

CLAIR T. BLIKRE graduated from Tioga, the school where he now coaches, and then took his degree from the University of North Dakota. Last year, his first in coaching, his team won 26 games out of 33, won the conference championship and then lost out in the district finals to the team that went on to win the state championship.

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More On the Revolving Offense

By JAMES W. TUMA
Captain, United States Marine Corps

EACH winter service basketball is characterized by candidates for the squad who are the products of many types of basketball offense. To one aware of the various offenses stressed in various sections of the country, it is often possible to tell where the prospect 'hails from' by his particular style of play. Since it is hardly feasible to develop an offensive system by geographical location, it is necessary to adopt an offense concurrent with individual skills and which features a definite offensive pattern. This pattern must be relatively simple since seldom, if ever, is a service team held intact for a complete season. Often a squad may be broken up several times a year since primary military obligations may cause a shuffle of the squad overnight.

The writer has found that the revolving offense, often called a figure-of-eight or a down the middle merry-go-round, has proven an ideal offense to use since it decidedly improves individual fundamental skills through its fast-moving pattern. This pattern, with several variations described below, is comparatively easy to learn and learn well.

The revolving offense is strictly a team offense. Scoring is more evenly divided than in a deliberate offense or in the often over-emphasized opportunity offense. Little differentiation is made in player positions. There are no offensive guards, forwards or centers. Each of the five participants is a cog in a well-timed basketball machine. The revolving offense places a premium on the development of adept ball-handling, fast cutting, good dribbling and close-up shooting. It stresses stamina,

endurance, and physical fitness. It is highly adaptable to a team lacking height. While the revolving offense may seem to be weaker on defensive recovery than a three-out and two-in offense or vice versa, the emphasis on ball possession and quick anticipation of the offensive action completed seems to compensate for any inherent defensive weakness. It cannot be over emphasized that "offensive action completed" begins when the team sees that they are inevitably going to lose possession of the ball—not when the ball is already lost. Likewise "defensive action completed" begins when the team sees they are going to get the ball—not when possession is already gained. On these two statements hinges a factor which will result in the failure of the opponents to succeed in fast-breaking a basket or the home squad's success in executing a quick thrust. The

on the floor are numbered 1 through 5; the five players are lettered A through E. Player C dribbles toward D, passes to him and executes a running screen, then follows the path shown. Player D dribbles toward B who is breaking in and across, passes to B and follows the path as diagrammed. B passes to E, etc. The legend is: C-D-B-E-A-C-D-B-E-A-C. Points that must be stressed in this fundamental drills are:

1. Players must be around the loop and breaking at least laterally as they receive the ball.
2. Sharp corners must be executed in the back court or the defense will ride the offense out toward the center circle.
3. Players must dribble with the hand that is away from the opponent.
4. There should be no loafing in the key-hole—keep the center clean.
5. Do not allow the offensive players to bunch up. Stress that there will be a player near each numbered position at all times.
6. This drill calls for fast-breaking receivers and passers and not the plodding type.
7. When the 'in' players see a teammate is going to shoot, they angle for rebound position and drive in at that time—not after the shot has already been released.

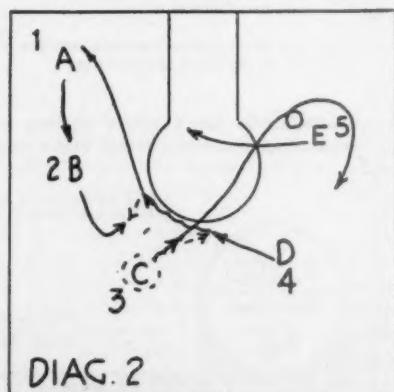
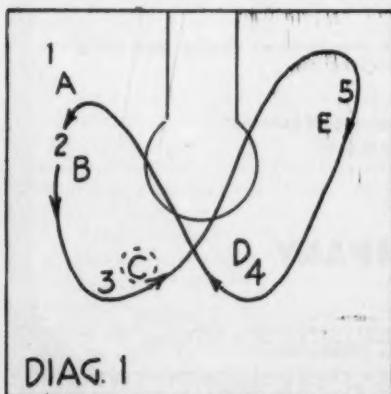
Variations of this drill to counter a shifting out court defense consist of:

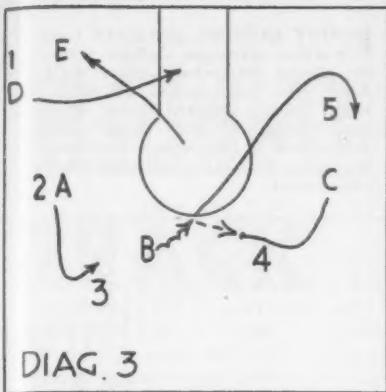
1. The dribbler passing up his receiver, continuing his dribble and cutting sharply toward the basket.
2. The receiver taking a step, reversing his course and dribbling to the basket.
3. Breaking a rear-court man toward the basket at any time to loosen

JAMES W. TUMA majored in physical education before enlisting in the Marine Corps in 1942. After receiving training at Massachusetts Institute of Technology he served with a radar squadron. During the past two seasons he coached the Marine teams at El Toro, California. In 1948 his team went to the finals of the All-Navy tourney, losing to Quantico by two points.

revolving offense is a colorful offense from the spectator point of view because it exhibits a definite pattern should a defensive man tire or momentarily relax. This offense is particularly effective if leading toward the end of a game when ball possession is all important. Player material being equal, it is excellent against a pressing defense. Current rule changes will undoubtedly place a higher premium on a team's ability to move the ball during the closing minutes of play. While the revolving offense is less adaptable to principles of following up a shot at the basket than is a single pivot or a double post offense, and must be modified (as do most other offenses) for use against various zones defenses, it offers an optimum offense for limited instruction periods.

The primary drill, known to most coaches, consists of the pattern shown in Diagram 1. The strong side is set up to the left because more players are adept at shooting a one-hand push-shot from left to right. The five positions

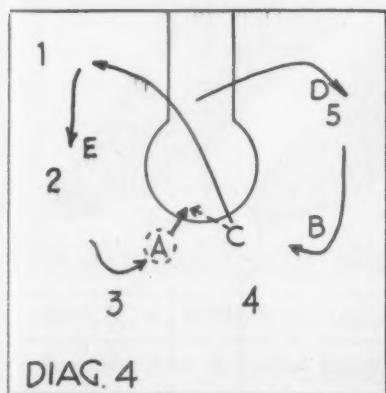




up the defense, or breaking a corner man for a quick pass to the basket. When this five-man drill or embryonic offense has been mastered and can be executed against a tight aggressive defense, the squad is ready to be taught a rolling offense with several deliberate screens, yet an offense that carries complete continuity throughout each cycle of the sequence. Referring to Diagram 2, the ball is held by C at position 3. C passes to D, cuts inside D on a running screen and then goes down to roll E's defensive man. D is already dribbling toward B coming out and over to receive the pass. D takes position 1 as A moves to position 2. B attempts to get the ball in to E who has timed his break across on C's roll.

E, on not receiving the ball (see Diagram 3) moves to position 1 to set a screen for D. B, in the meantime has dribbled across and passed to C breaking out from position 5 to 4. B moves to position 5. C attempts to get the ball in to D who is breaking across on E's screen. If D does not receive the ball, C passes to A breaking from position 3 and moves to position 1. B is breaking to position 4 and E to position 2 (see Diagram 4). The cycle is not complete with the ball back in position 3. After five cycles of movement, the players will all be back in their

(Continued on page 67)



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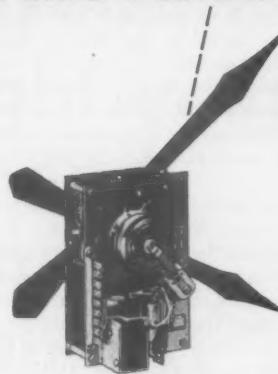
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Ball Handling

By ROBERT QUIRING

Basketball Coach, Kalamazoo, Michigan, High School

THE fundamental which carried us through the state tournament last year was handling the ball. Our practice gym is small (we use the Western Michigan College gymnasium for games), so we spend a lot of time on fundamentals. I thought it might not be too beneficial to scrimmage a lot in a small gym and play on a large floor.

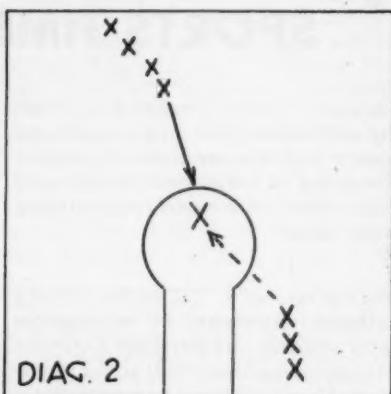
We emphasize speed during these ball-handling drills and while learning the drill we start out fast, never trying to learn a drill slowly and speed up later. Most boys can catch and pass a ball while standing still but a good many cannot do these things well while moving down the court. I think that the answer to this is the first few drills we do every day. These drills require the boy to catch and pass the ball while running.

Hand position is the most important thing to learn in ball-handling. The fingers should be spread and slightly above the center of the ball when using the two-handed chest pass. The fingers should control the ball, the palms never touching it. In receiving a pass, the eyes should be kept on the ball, hands relaxed, fingers spread with thumbs in. The receiver should give slightly when receiving the ball, relaxing arms and shoulders; from this position the player can receive and pass in one motion without changing his hands on the ball.

The first drill that we do loosens up the fingers and wrists and also warms up the leg muscles. It is called the In File Drill (This drill is diagrammed on page 42 of the October issue).

This drill should be fast and at close range (three feet). The pass should be soft because as the player moves for-

ward with the ball his speed makes a hard pass to the next man. He doesn't have to use his arms to speed it up, just his wrists and fingers. The player receiving the ball meets it with fingers relaxed, well out in front of his body. If the fingers are not relaxed there will be fumbles. In case of a fumble the ball is pounced upon by the nearest player, passed back in play quickly and the drill goes on.



To develop fingers and wrists I use a basketball cover stuffed with rags or a medicine ball, one or two nights a week early in the season. Handling a heavy ball too often might throw a boy's shooting technique off.

The next drill that we do is rather difficult to learn but it pays off in better ball-handling after it has been taught to the squad. Like the previous drill it has to be done correctly and fast. It is done in two circles going in opposite directions about the width of the free-throw circle apart. This drill teaches the young players to pass the ball again from where he catches it. It teaches him to get his body off the floor and hang there for a split second while he handles the ball.

Diagram 1. B1 passes to A1 using a left shoulder pass and jumping in the air as he passes. He passes high so A1 has to jump to catch the ball. Before A1's feet hit the floor he passes it to B2 who is in spot previously occupied by B1. B2 passes high to A2 who has come into the spot where A1 started out. The circles keep moving around, and all boys watch for bad passes and get a widely thrown ball back in play quickly. After the ball is handled in this direction for a few minutes, the

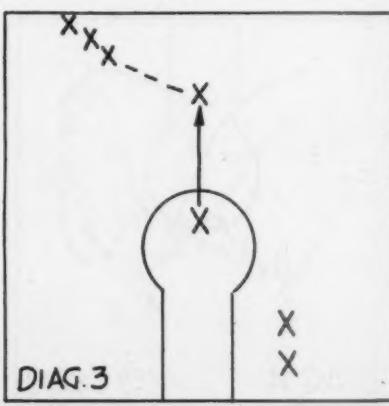
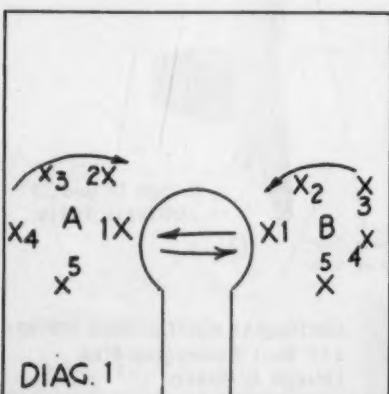
ROBERT QUIRING graduated from Western Michigan College where he played basketball under Buck Read. He has coached at Martin High School, White Pigeon High School and Western State High School, all in Michigan. Last year his team won the state basketball tournament.

circles are reversed. The players in circle A who were using a right shoulder pass have to use a left shoulder pass and circle B begins using a right shoulder pass. This drill takes time and patience to perfect but its value for developing spring and timing alone is invaluable.

The next ball-handling drill we do is the double cut. In this drill our pivot men in one line are taught to handle the ball well out in front of them and pass back out from this position. The forwards and guards are in another line thirty feet away and they pass in with a hard, over-hand, or a two-handed push-pass to the pivot man who meets the ball in the outer half of the free-throw circle. The passer breaks in and over to one side and stops, then the pivot man flicks the ball out to him. He passes in again to the pivot man and fakes to the right and drives in to the left or fakes to the left and drives to the left or fakes to the left and drives to the right of the pivot man. The pivot man fakes to him as he goes by and passes over his opposite shoulder to give the breaker a lay-up shot.

(Diagrams 2, 3 and 4)

Another drill with a good deal of value is the pass-and-break drill from both sides of the court. This is a simple drill but if it is not done at top speed with the ball handled out in front away from the body and if the lines aren't directly across from each other so that the passer has to cut back to lay up his shot, the drill may as well be discarded. The player feeding the ball in may throw a blind pass or look



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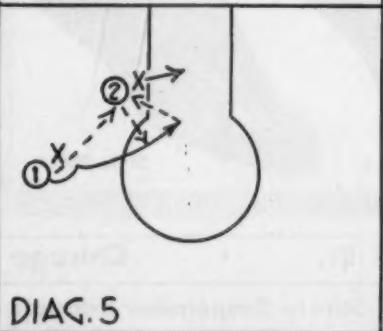
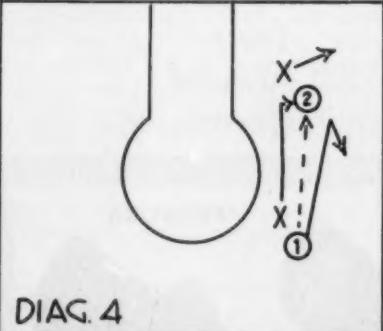
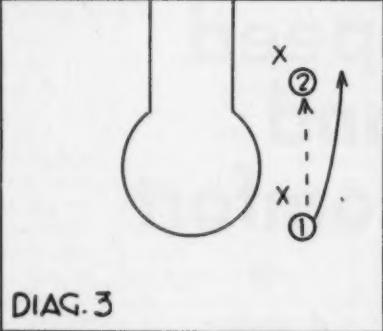
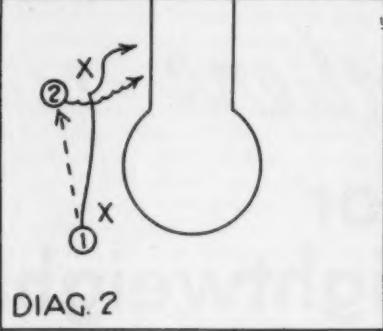
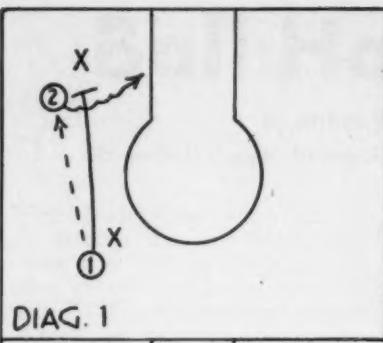
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Offensive Screens

By FRED D. MAASDAM

Basketball Coach, Ottumwa High School, Ottumwa, Iowa



THE 1949 Iowa State champion basketball team's record of twenty-four wins in twenty-five games owes much of its success to the players ability to use a set offense and screens.

In our attack we use principally the three in and two out and occasionally the three out and two in where we are trying to draw a tall defensive pivot man from underneath the basket.

Screen type of offense requires a lot of practice on timing and cutting but during this time the boys are also able to get a lot of practice on ball-handling and footwork which are so very important in a good screen offense.

A boy must be a good ball-handler and clever on his feet in order not to foul the defensive men. He must be able to cut off the screen at times and be a part of the offense again.

The inside and the outside screens, are, of course, the most commonly used screens. The inside screen gets its name from the path the screener takes. In this he tries to place himself between the defensive player assigned to a teammate and the basket. The main purpose is to loosen up the defense so that his teammate may get in a better position to score. Also the screener will cause the defensive player to take a round-a-bout path to regain his defensive position.

The stationary or inside screen is shown in Diagram 1 where the screener stops just short of the defensive player. One passes to 2, follows his pass and sets up in a position in front of X2. He keeps this position as 2 comes around with a dribble. X2 must maneuver around 1 to follow the dribbler or he may shift with X1. On the shift X2 covers 1 while X1 goes after 2. Diagram 2 is the same, only the screener continues on and can be a part of the offense should player 2 see fit to pass to him. One passes to 2 and goes into the path of X2 as in Diagram 1. He does not stop but continues on toward the basket. Two must start his dribble sooner in this play and cut behind 1 at the right time. By continuing his course, 1 gets into a position for a return pass if X2 does not stay with 1. This type of screen requires a lot of drill and timing. This type of screen requires good timing on the part of the offensive man crossing the screen. The screener has an easier task to avoid the defensive man and a better chance

for a direct path to the basket in case the defensive men forget to shift men or get caught out of position. The outside screens we employ are used mainly to loosen up the defense long enough to allow an offensive player to assume the pivot position for a pass or a fake shot and pass to a cutting teammate. On the outside screens, the screener is usually the ball-handler. Diagram 3 shows one type of outside screen. No 2 and 3 illustrate the side-line type of screen. One passes to 2 and cuts between the receiver and the side line. Two may (a) return the pass, (b) spin and cut for the basket, or (c) pass to another player with an inside continuation.

Screens have a tendency to encourage the defensive players to loosen up to prevent short shots. This makes the shot from behind the screens an important part of our offense as shown in Diagram 4. Shot from behind outside screen: — 1 passes to 2 and starts as if to go outside the screen set by 2. X2 sees the screen and shifts to take 1, X1 goes through as indicated to get defensive position on 2. One continues to outside, stops suddenly and steps back to get in shooting position. If it is impossible for 1 to get his shot away he may pass to another teammate.

In playing against teams that shift on defense, we find that it is difficult for the shifting defensive men to get in proper defensive position.

The screen attack we find is usually effective against the shift on either the inside or outside type of screen. Diagram 5 shows the play against outside screen. Play against outside screen: — 1 passes to 2 in post position and cuts past 2 for a return pass. When X2 shifts to cover him, 1 returns pass to 2 who pivots and prevents X1 from getting defensive position directly behind him. Diagram 6 shows play against the inside screen. 1 passes to 2 and sets up inside screen on X2. X1 shifts to 2 dribbling around the screen

(Continued on page 54)

FRED D. MAASDAM has been head coach at Ottumwa for two years. During this time his teams have not lost a game in the Little Six league. Last year his team won the state basketball tournament in Iowa.

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State Laws and Regulations for the Construction of Stadiums and Bleachers

BECAUSE we are frequently called upon for information relative to the various state laws and regulations for the construction of stadiums and bleachers and the safety requirements for these structures, the ATHLETIC JOURNAL recently sent questionnaires to the various states. This is a report on our findings.

The first question asked was "Are there laws in your state concerning the erection of portable bleachers? Only nine* states have specific laws. Seven states do not have laws which specifically apply to portable bleachers but have statutes which apply to general buildings. Nineteen states have no laws in this connection: Alabama, Arizona, Florida, Idaho, Illinois, Iowa, Kansas, Kentucky, Maryland, Michigan, Missouri, Nebraska, New Hampshire, New Jersey, Oklahoma, Oregon, Rhode Island, South Carolina and South Dakota.

The following are answers to this question or are excerpts from the states' statutes which bear on this question.

Connecticut: "All tents and portable structures shall be adequately supported, guyed and braced to withstand wind or suction pressure. . . . Grandstands and bleachers shall be structurally self-contained, having within themselves all the necessary parts to withstand and restrain all forces which might reasonably be developed during human occupancy. They shall be so designed and manufactured that if any structural members essential to the strength and stability of the structure have been omitted during erection, the presence of unused connection fittings will make the omission self-evident. . . . Railings or guards not less than 42 inches in height above the aisle surface or seat platforms, whichever is adjacent, shall be provided along those portions of the ends of all grandstands where the seats are more than four feet above the ground, and along the backs of all grandstands where the back row of seats is not secured firmly to the platform to prevent tipping backward."

Indiana: Requires bleachers to sustain a 100 lb. per square foot live load. Seats must be spaced not closer than 22 inches from back to back. Entrances must be at least seven feet wide, aisles three and a half feet wide.

*Thirteen states failed to reply.

Massachusetts: "Plans and specifications of portable bleachers shall be approved by the inspector in the district before the bleacher is erected or relocated. . . . Portable grandstands and bleachers shall be provided with wood sleepers or mud sills of at least two-inch plank, or shall be supported on masonry footings. If so directed, sills shall be placed both parallel and at right angles to seating platforms. . . . Mud sills or sleepers shall be of adequate area to support superimposed loads without settlement, and shall be secured against lateral movement."

Pennsylvania: "Portable grandstands shall be of an approved type. . . . A portable grandstand shall be self contained, having within itself all necessary parts to withstand and restrain all forces which may be developed during human occupancy. The strength, stability or safety of the structure shall not be dependent upon stakes, curbs, walls or other external objects.

Wisconsin: "Portable grandstands or bleachers shall be self-contained units having all necessary parts to withstand and restrain all forces which may be developed during occupancy. They shall be so designed and constructed that if any structural member essential to the strength and stability of the structure is omitted during erection, the presence of unused connections or fittings will make the omission self-evident. . . . A-frames or other supports and seat stringers for portable grandstands or bleachers shall be secured to prevent accidental displacement during occupancy. . . . Portable grandstands shall not be more than twelve feet above the ground or surface at the front of the grandstands.

The second question was: "Are there laws in your state concerning the erection of semi-permanent bleachers?" The following are various replies from some of the states.

Indiana: Same requirements as for portable bleachers.

Massachusetts: Same requirements as for portable bleachers.

Ohio: "Seat steps in grandstands, stadiums, athletic field houses, recreation buildings and similar structures shall not be less than twenty-four inches in width where benches or seats without backs are used, provided the seat step risers are not more than thirteen inches in height; and where seats

with backs are used or where seat step risers are more than thirteen inches in height, seat steps shall be not less than thirty inches in width. . . . No seat shall be more than thirty feet from an aisle in any grandstand, stadium, athletic house, recreation building or similar structure."

Wisconsin: "Grandstands erected of frame construction shall be located at least twenty feet from any other building or adjoining property line unless the exterior walls of such adjacent building are of two-hour fire-resistive construction or better and all openings therein are protected with fire-resistive doors and windows. . . . No wood grandstand shall exceed 10,000 square feet in ground area or 200 feet in length. . . . Wood grandstand units shall be placed not less than twenty feet apart. . . . The highest level of seat platforms of any wood grandstand shall not be more than twenty feet. . . . Seat board and foot boards shall be designed to safely support a live load of not less than 120 pounds per lineal foot. The width of the boards shall not be less than 7½ inches.

The third question was: "Are there laws in your state concerning the erection of permanent bleachers or grandstands?" The following are some of the salient requirements of the various states.

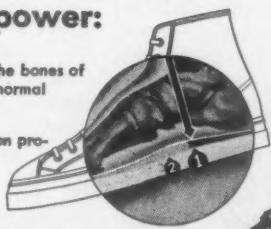
Connecticut: "If amusements are to be given after sundown there shall be sufficient illumination by electric lights . . . so that patrons may easily and safely find their way to and from all of the amusement units, and to and from the adjoining streets or highways, such electric service to be provided either by the local public utility or by a portable power plant provided by the owner. In either event, such electrical installations and maintenance shall be in accordance with generally accepted good practice and shall meet with the approval of the local official charged with the duty of inspecting electrical installations. If a portable electric power plant is used it shall be located in a segregated area or structure to which the public may not be admitted. The electric lines leading from such a portable power plant shall be properly insulated, and either entrenched in the ground or properly covered so that they will not constitute a hazard to foot travel. If such lines are overhead they

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shall be at least ten feet from the ground.

"Aisles in grandstands having eight or more rows of chairs on platforms shall be at least forty inches in width. Aisles may not be less than thirty inches in grandstands when serving not to exceed sixty seats.

"Grandstands with chairs shall be provided with aisles so located that no seat of a row shall have more than eight seats between it and the nearest aisle. Steps in aisles shall have risers not greater than $7\frac{3}{4}$ inches in height, and treads shall not be less than nine inches in width. All aisles and passageways serving grandstands shall be kept free and clear at all times and shall not be occupied as seating or as standing room area. Egress passages, including stairways and ramps shall be not less than forty inches in width. They shall be distributed equally to effect a rapid discharge of occupants."

Indiana: Requires seven feet of exit for each 2,000 seating capacity. Requires design for a 100 pound per square foot live load. Spacing of seats (back to back) shall be 24 inches. Entrances must be seven feet wide. Aisles must be three feet six inches wide. Seat spacing must be one foot six inches from side to side.

Massachusetts: "These regulations shall apply to grandstands, bleachers, stadia or arenas existing September 27, 1947, where practical and the use of the structure warrants. If, in the opinion of the inspector, an existing structure may be dangerous to life or limb, he shall order the owner thereof to furnish calculations for anchorage and footings including soil test data, and for live, dead, sway, and wind loads of structural members, in the form of an affidavit of a registered professional engineer, such affidavit to be submitted with plans of changes which he deems necessary to make the structure safe. No structure which is designed to be used, or in which alterations shall be made for the purpose of using it or continuing its use as a grandstand, permanent bleacher, stadium or arena, shall be erected, and no alteration shall be made therein, until plans and specifications, in triplicate, have been deposited with the supervisor of plans of the department of public safety. The supervisor of plans may require plans showing all details of construction, including the size of materials of all members, the methods of anchorage and footings, including soil test data, and calculations for live, dead, sway and wind loads for all structural members, and may further require an affidavit of a registered professional engineer certifying as to such calculations for structural members. The supervisor of plans may require that space

under grandstands or permanent bleachers used for commercial purposes shall be enclosed in a one-hour fire resistant material, and may make such further requirements as may be necessary to prevent the spread of fire. Permanent grandstands shall be erected upon and attached to concrete or masonry foundations extending below the maximum depth of frost, and at least six inches above natural grade. Grandstands or bleachers shall be designed to support a uniformly distributed live load of one hundred pounds per square foot. Mud sills or sleepers shall be of adequate area to support superimposed loads without settlement, and shall be secured against lateral movement. The toe of each stringer shall be secured to the mud sill or sleeper, all horses or posts shall be secured against movement, and adequate sway bracing shall be provided as directed. No more than one cantilever seat shall be permitted. A grandstand having a railing along the front shall be provided with aisles so located that no portion of any seat shall be more than thirty feet from the nearest aisle. A grandstand having seats with backs shall be provided with aisles so located that no portion of any seat shall be more than thirty feet from the nearest aisle. Aisles shall be not less than three feet six inches in width, provided that where an aisle is divided into two parts, each part shall be two feet in width. Where an aisle is elevated above ground level, each aisle shall be provided with a stairway or ramp not less than the width of the aisle. Grandstands having more than thirty rows of seats shall have transverse aisles not less than sixty feet apart leading to stairs or ramps. The supervisor of plans may require that a transverse aisle end on a stairway. Transverse aisles shall be not less than five feet in width. The horizontal distance back to back of bleacher seat platforms used without individual chairs shall be not less than twenty-two inches. Where the same level is used for seats with backs these levels shall be not less than twenty-four inches in width. Where chairs are used, the horizontal distance back to back shall be thirty inches. Seats shall be securely fastened to their supports in such manner that they cannot accidentally be displaced. Footrests shall be supported in such manner that they cannot accidentally be displaced. Footrests which are lapped shall be provided with some positive means to prevent displacement of one piece on the other. All chairs shall be securely fastened in place. Railings shall be provided (a) along the back of all grandstands if the rear seat is more than four feet above the ground, (b) along those portions of the ends

where the seats are more than four feet above the ground, (c) along the front if the footrest is more than two feet above the ground. The minimum dimension of any clear opening in a railing shall be eighteen inches."

New York: "No permanent open air place of public assembly of combustible construction shall have a seating capacity exceeding 1200 persons except as an aggregate of units whose individual seating capacity does not exceed 1200 persons and which are separated from any adjoining combustible construction by an open area at least fifteen feet wide or by construction having a fire resistive rating of at least two hours which extends at least two feet above the seats. Every floor level, seat platform, deck, balcony, stairway, aisle or ramp which is more than two feet above grade or ground level, or above any other level occupied by the public, shall have at all open sides or sections thereof a protective railing or guard at least 36 inches in height."

Pennsylvania: "Detailed plans of permanent grandstands shall be submitted for approval before building operations are begun. Such grandstands shall be inspected after erection and permission granted by the Department of Labor and Industry before they may be used. . . . A grandstand shall be so designed that the maximum expansion, contraction, settlement or misalignment likely to occur during the life of the stand will not cause stresses in excess of those specified, nor jeopardize the strength or stability of the structure or the safety of its occupants. . . . The seats and footrests of grandstands shall be designed to support, in addition to their own weight, a uniformly distributed live load of not less than 120 pounds per linear foot of seat and footboard. All other parts of grandstands shall be designed to support a uniformly distributed live and impact load according to the back to back distance between seats, as follows: 22"—130 pounds per square foot, 23"—125 pounds, 24"—120 pounds, 25"—115 pounds, 26"—110 pounds, 27"—105 pounds, more than 27"—100 pounds. In no case shall the supporting structure be designed for a static live load of less than 100 pounds per square foot or horizontal projection, except that when the grandstand is designed to accommodate permanently fixed chairs the load may be reduced 20 percent provided the live load for aisle and passage ways shall be not less than one hundred pounds per square foot. They shall also be designed to resist a horizontal swaying force applied to the seats, in a direction parallel to the length of the seats, of twenty-four pounds per linear foot of seats, and in a direction perpendicular to the length

of the seats, of ten pounds per linear foot of seats. . . Permanent grandstands shall be erected upon and attached to concrete or masonry footings extending below the usual maximum depth of frost. The area of footing shall be such that the total load shall not exceed the sustaining power of earth. . . All structural members (applies to steel only) of portable and permanent grandstands shall not be less than one-fourth inch thick except for the web of rolled structural shapes which shall be not less than .17 of an inch thick. For gymnasium type grandstands permanently attached to the interior of building, the required thickness of steel may be decreased, provided that in all other respects it complies with the requirements of these regulations and that the location and usage of any member is such that there is no likelihood of distortion which might affect the safety of the grandstand."

The Role of Calcium

(Continued from page 6)

Eight of the ten athletes officially bettered their best previous competitive marks. Practically all reported greater muscular relaxation, more stamina and faster recuperation between events.

It is interesting to observe that on the average it required twenty days before any improvement was noted. Thus, thirty-six grams of calcium were required to bring about the required blood saturation. The over-all percentage of 2.178 percent improvement recorded is staggering when one considers that in the 440-yard free style a 2 percent amelioration represents an advantage of almost thirty feet, an important distance in view of the fact that some events are won or lost by sheer inches.

Just what occurs when soluble ironized calcium is introduced into the bloodstream is not perfectly understood. Obviously, fatigue poisons are more rapidly oxygenated back into energizing glycogen. How this occurs is not positively known but it is reasonable to assume that the calcium acts as a catalyst increasing the haemoglobin co-efficient which enables more life-giving and neutralizing oxygen to be transported to the acid-fatigued muscles.

(I wish to thank Dr. Edgar End, Professor of Physiology at Marquette University, for his extremely valuable assistance. In all, he has devoted six years of research on the role of calcium in athletics. I also wish to express my gratitude to Father Thomas Stemper, S. J., Chairman of the Athletic Board at St. Louis University, for his ap-

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1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, John L. Griffith, 6858 Glenwood Ave., Chicago. Editor, John G. Holmgren, Jr., 6858 Glenwood Ave., Chicago. Managing editor, John L. Griffith, 6858 Glenwood Ave., Chicago. Business manager, John L. Griffith, 6858 Glenwood Ave., Chicago.

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5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily, weekly, semiweekly, and triweekly newspapers only.)

JOHN L. GRIFFITH,
(Signature of publisher.)

Sworn to and subscribed before me this 1st day of October, 1949.

(SEAL) MARGARET M. ARNS
(My commission expires August 12, 1952)

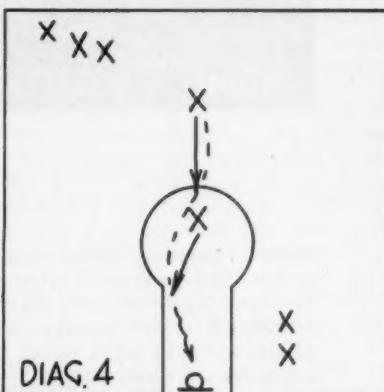
approval of the calcium tests and for his keen interest. To Mr. Philip Ragazzo, coach of the championship swimming team and to Philip Hahn, student at

the university, I wish to make known my appreciation for their splendid co-operation and for the many hours of work which they contributed.)

Ball Handling

(Continued from page 44)

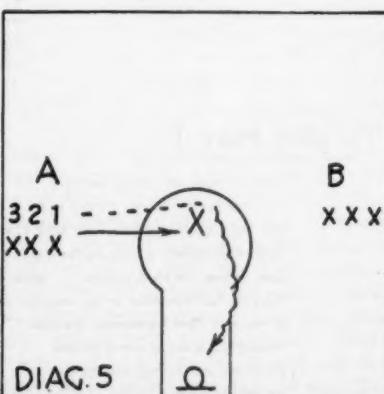
in one direction as he passes in another to make his pass in more effective. He must be sure to pass first and then break in around the pivot man. When the pass is made from the left side of the court and the break is around to



the left, the coach should insist on a left-hand lay-up shot.

A passes to B1 then breaks around fast for return pass and a left-hand lay-up shot. After a dribble B1 pivots to the right and follows in for follow-up or if basket is made he gets ball and throws it out to A2. A1 then goes to end of line (B) and B1 goes to end of line A. (Diagram 5).

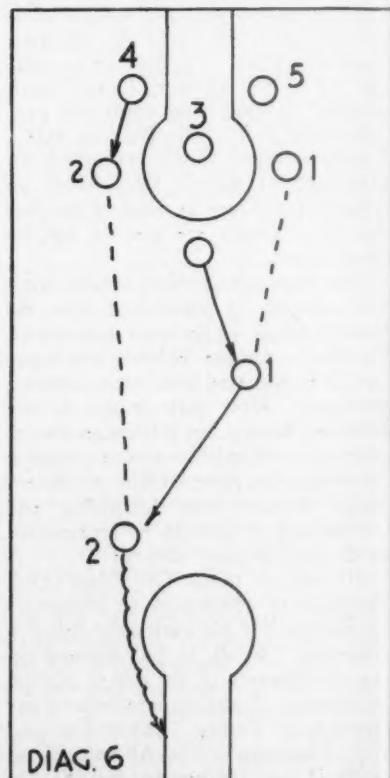
These drills should be used every



day along with other shooting and dribbling drills which the coach has as soon as the players show improvement in handling the ball, the fast break drill off the backboard should be used. At first the boys may pass wildly and their timing will usually be off. With much practice this drill will smooth

out and the five best ball-handlers will stand out above the rest. The coach starts the drill by throwing the ball against the backboard and making it rebound to either guard; the guard passes the ball before his feet hit the floor out to the forward on his side, who passes quickly to the center at the edge of the free-throw circle. The center passes to the forward on the opposite side who is down court by this time cutting across. He passes to the other forward who now is all the way down court for a lay-up shot. The ball travels from 4-2-3-1-2. If 5 gets rebound he passes to X1 before his feet hit floor. X1 passes to X3 (center) who passes to X2 who is down court and cutting across, X2 passes while going at top speed to X1 who dribbles in and shoots. (Diagram 6).

There are a good many other drills which include dribbling, shooting and ball-handling. These which are shown here are quite easy to learn and can be done for a few minutes each day.



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We do the In File drill and the Pass-and-Break drill along with our shooting practice as a warm up preceding each game. I believe that drills are of more value than just taking a few shots at the basket before a game.

Another important point concerning practice is that sessions should not be too long. Most coaches in their first few years out of college sometimes have three hours or more of practice with a good deal of scrimmage. Many more experienced coaches now have reached the conclusion that two hours time is sufficient.

Offensive Screens

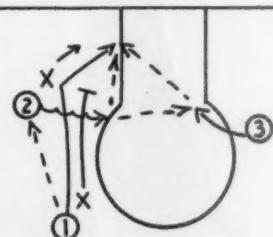
(Continued from page 46)

and 2 passes to 1 cutting for the basket. Two may also pass to 3 who in turn may pass to 1. (Diagram 6)

The pivot shot is also very important in a good screen attack. In the pivot shot the pivot man uses a one-hand push-shot. We have found that a smaller pivot man who is a good ball-handler can break from the side to the pivot position and fake his defensive man off and then either shoot or pass off to a teammate cutting for the basket.

It is important that the screen system be flexible enough to allow the players to get the most out of their own ability and at the same time to take advantage of the weaknesses of the defensive players.

In order to make offensive screens effective, a lot of time is necessarily spent on drilling the players so that they will time their screens accurately.



DIAG. 6

The fundamentals of basketball plus teamwork and good ball-handling are the essential things in a good screen offensive.

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We do the In File drill and the Pass-and-Break drill along with our shooting practice as a warm up preceding each game. I believe that drills are of more value than just taking a few shots at the basket before a game.

Another important point concerning practice is that sessions should not be too long. Most coaches in their first few years out of college sometimes have three hours or more of practice with a good deal of scrimmage. Many more experienced coaches now have reached the conclusion that two hours time is sufficient.

Offensive Screens

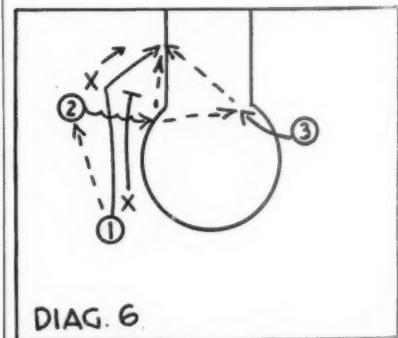
(Continued from page 46)

and 2 passes to 1 cutting for the basket. Two may also pass to 3 who in turn may pass to 1. (Diagram 6)

The pivot shot is also very important in a good screen attack. In the pivot shot the pivot man uses a one-hand push-shot. We have found that a smaller pivot man who is a good ball-handler can break from the side to the pivot position and fake his defensive man off and then either shoot or pass off to a teammate cutting for the basket.

It is important that the screen system be flexible enough to allow the players to get the most out of their own ability and at the same time to take advantage of the weaknesses of the defensive players.

In order to make offensive screens effective, a lot of time is necessarily spent on drilling the players so that they will time their screens accurately.



DIAG. 6

The fundamentals of basketball plus teamwork and good ball-handling are the essential things in a good screen offensive.

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Floor Positions In Short Lay-ups

By LES MICHAEL

Athletic Director, Mentor High School, Mentor, Ohio

HERE are an endless number of basketball articles which tell how to have the body ready and "set" to shoot, but it seems to me that coaches might be forgetting to include the position on the floor in relation to the basket when they are teaching the boys to shoot. For example, in the ordinary practice of short-shot lay-ups, time after time the player, when coming down the middle of the key-hole, will let his body get too far under the basket before he goes up to lay the ball over the rim. The same thing happens when players are coming in from the side of the basket. This necessitates rolling the arm backward (which is very unnatural) in order to get the ball out from under the basket so it can be placed over the rim. During a recent practice session, when we were having our short-shot lay-up drill, coming in from the side, I noticed that almost invariably, when the boy made contact with the floor inside the side lines of the key-hole, his body would be too far under the basket for an easy lay-up shot. Once this fact was pointed out to the players it became an easy thing to overcome. We found, by a long period of repetition, that foot contact with the floor on these side shots should be made approximately four inches outside the side lines of the key-hole, and the take-off should be made from that point (B and B¹ of Diagram A and B).

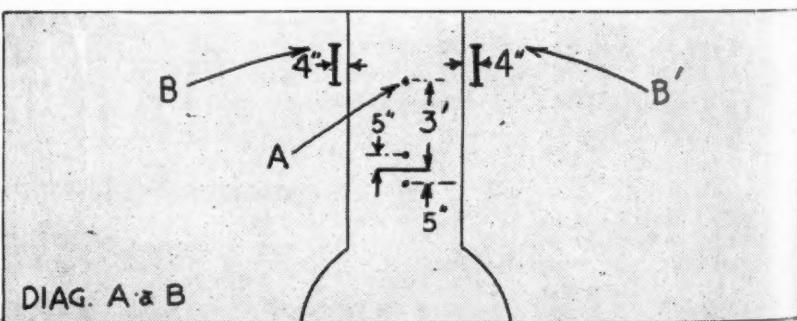
In arriving at a take-off point when coming down the middle of the key-hole it was necessary to drop a plumb-bob from the edge of the basket extending toward the enlarged end of the key-hole. This spot was marked and by a process of trial and error we found that if we measured out three feet from the spot where the plumb-bob touched the floor we had a good take-off point

on the floor for our shots coming down the middle. By more experimenting it was found that short boys would come inside this established point approximately five inches, while taller boys would leave the floor approximately five inches outside the established point (A of Diagram A and B).

A record was kept over a period of practice sessions during these short-shot lay-up drills in order to bear out the facts about our established take-off points. It was found that when the boys left the floor in the areas designated 90 percent of the lay-ups were made; when the boys left the floor inside the designated areas only 50 percent of the shots were made. After explaining these figures to the players and telling them the reason for the wide range in percentages, they were convinced of the feasibility of our line of reasoning and they feel they have overcome a condition which might otherwise have cost them needed points in a game.

I would suggest a detailed explanation be made to the boys at the beginning of basketball season, marking the take-off areas on the floor for them to concentrate on for a few days, after which these areas will become automatic with them and possible errors will be overcome before they are serious problems.

LES MICHAEL graduated from Ohio Wesleyan University. He coached football and baseball at Urbana, Ohio, High School before entering the service during the war. He was freshman coach at his alma mater in 1946-47. He moved to his present position in 1947.





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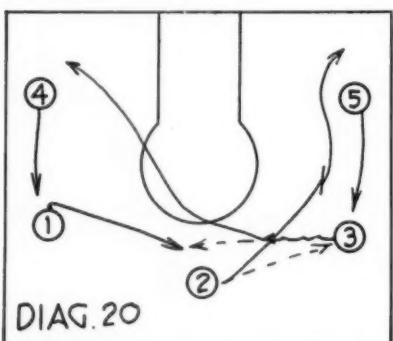
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The Double Post

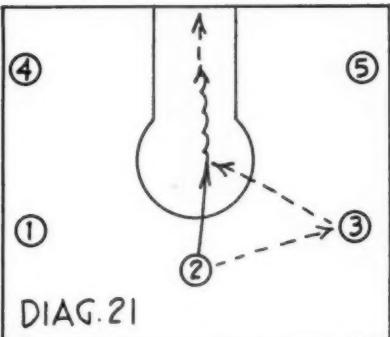
(Continued from page 26)

the corners for this set-up.. This weave play was also used as a stall play whenever necessary all through the year. In general its main value is as a stall, or when the defense is pressing the cutters closely. The three cutters weave in front. The post men pull to the side



leaving more room in the vital key-hole area.

We emphasize three tactics off the weave: (1) screens and screen-rolls, (2) the cut, (3) individual change of

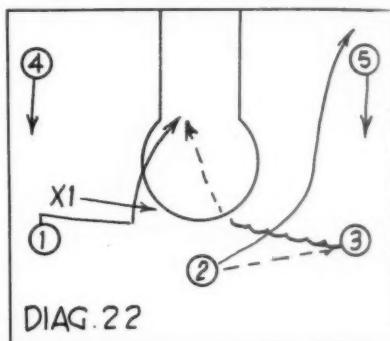


direction. Frequently we had all five men in the weave (Diagram 20). We told our big post men to pass the ball on when they received it rather than try a dribble or cut themselves.

Tactics Off the Weave

We emphasize that a weave in itself is merely something to look at. Unless the players know how to exploit its inherent play options there is little to be gained by using it. Of course every pass in the weave is followed by a potential screen (Diagrams 19 and 20). At any time a player can drive off the screen or pass back to the screener who drops off as the defensive men switch.

The second tactic off the weave is the cut. As shown in Diagram 21, at any time one player can pass to another and cut for a return pass. The cut is made more effective if the player takes one step as if to screen, then cuts. A variation of the cut is illustrated in Diagram 22. Whereas in Diagram 21, the passer cuts, in Diagram 22, the potential receiver moves to meet the pass, then changes direction as his guard is off balance. The individual change of direction with the ball is the



trick shown in Diagram 10. This trick becomes effective after the defense begins to anticipate the regular weave pattern.

A few conclusions regarding our

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experience with the double post may be of interest. With our material, it was wise to use the double post, but I would not attempt to use it as my regular offense from year to year. The single post is more adaptable to the average run of high school material. The double post tends to cut down the scoring possibilities of small drivers from the outside. Also, if one fine center is available, his effectiveness will be somewhat hampered by having two post men. We have trouble developing really good set shooters, and therefore prefer to keep the key-hole as clear as possible.

The above merely points out a few of the problems of the double post. If, in analyzing his material, a coach rates two tall boys among his best five players, it would seem a shame to make one a first string center and the other second string. Frequently these tall boys are not effective as cutters, thereby limiting their efficient use to post play. The two big boys certainly help the rebound game on both back boards. The important factor if a team is to try the double post is proper preparation. The offense must be built systematically through drills. Offensive drills must be prepared to meet the particular situations of this offense.

Basketball Fundamentals

(Continued from page 20)

the pass on a one-count stop. He pivots toward the shooting line and passes to the shooter who cuts to the basket for a lay-up shot. These men all change lines so that they get the work at all positions. Care should be taken on the pass to the pivoter, the one-count stop by the pivoter, the actual pivot, and the pass he makes. On the pass we feel that it is important to start the pass with two hands as in our hip-pass drills and finish with the hand away from the defense.

After this drill has been learned for both right and left pivots, we instruct the rebound man to bother the pivoter so that he may pick his best direction and go either right or left. The outside lines may be ready to break for the shot, depending on the pivoter's direction. The man who does not get the shot serves as the next rebound man. This type of pivot is used when a player is advancing the ball toward the basket and is used more as an individual weapon against one defensive man.

Another drill for the pivoter off of the three-line formation is the criss-cross set-up which starts to teach a

screen by using the dribble pivot and pass (Diagram 3). The rebound is thrown to the first man in the center line and he may dribble either right or left diagonally ahead. When he has covered about half the distance between himself and the wing man, he stops with a one-count, pivots toward the basket and passes to the wing man coming behind him. After passing, he

HAROLD E. "BUD" FOSTER played basketball at Wisconsin where he won all-conference honors at center in 1929 and '30. He was also named to the All-American team in the latter season. He became varsity coach at Wisconsin in 1934 and since that time his teams have won three Western Conference championships and one NCAA championship. This is the third in a series of four articles on fundamentals.

throws his pivot foot ahead and should head toward the goal. The wing man, after taking the pass, dribbles diagonally in the other direction until he has covered two-thirds of the floor; he then stops with a one-count, pivots toward the basket and passes to the other wing man coming from behind. The man with the ball drives in for the shot and the two free men join in the rebounds.

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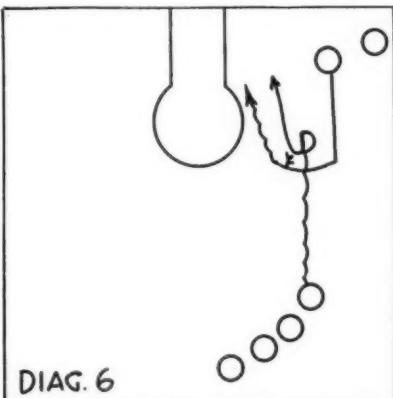
Care should be taken in watching the dribbler and the coach should insist that they dribble with the right hand going to the right and the left hand going to the left. This keeps the ball away from the defense and helps the boys react after scrimmage starts. This set-up may be used later with a three-on-three drill, having the player take advantage of openings that may occur.

This crisscross drill may also be developed starting with a pass instead of a dribble by one of the wing men. In this drill, the center man cuts diagonally ahead to take a pass on a one-count stop, pivots and returns the ball to the first passer. Upon receiving the return pass he dribbles through the screen or until the defense makes him stop, pivots and brings in the other wing man (Diagram 4).

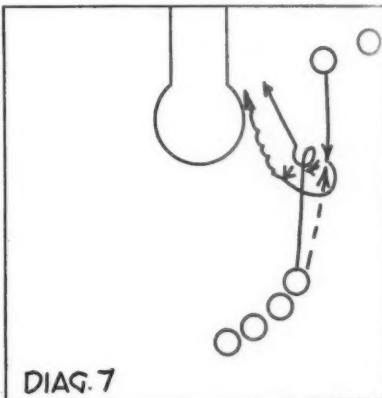
A good three-line drill with the center line shooting, is also fine pivot work and helps the players use the pivot as part of a screen development. The squad should be placed in a three-line set-up, the right wing should take the rebound, dribble from under the basket and pass to the other wing. The receiver should take the ball on the move, change direction so that he dribbles across the free-throw arc, stop with a

ing. Work on this may be done with two lines facing each other near the side lines. The man in the back court dribbles toward the corner man who advances on the side-line side of the ball man. As the man stops with a one-count stop and pivots toward the center of the court, his partner cuts sharp and tight around him taking the pass and throwing his defensive man behind the screen made by the pivoter (Diagram 6). Against a strict man-for-man defense the corner man might be in the clear if the screen works. If the ball man isn't free he might still find the screener open on a cut. Timing of the two men coming together is very important and care should be taken that the dribbler does not make contact with a defensive man. He must stop before getting too close and his pivot should be toward an area away from any defensive man.

On this same drill a screen resulting by a double pass, pivot and pass, will prove to advantage against a shifting defense. In this exercise the back-court man feeds the corner man coming into the ball. The passer goes inside, takes a return pass on the one-count stop, pivots toward the center of the court, letting the corner man cut around him



DIAG. 6



DIAG. 7

one-count, pivot toward the basket and pass to the center man driving in for a shot. At the time of the pass the pivoter has crossed feet and continues toward the basket for a screen on his imaginary men. He is then in a position to help on rebounds (Diagram 5). This is repeated and should be shifted from one side to the other so the dribble, pivot and passes may be practiced using different feet and hands. The coach should stress rebound work, passing coming into the ball, the dribble and a good pivot screen.

Using pivots to develop screens on the inside are well worth spending practice time on. Not only does the maneuver build a fine screen, but it also allows the pivoter to cut through the defense if the defense is slow in react-

very tight. At this point the pivoter looks for an opening before returning the pass and may see an opening to go through with a full spin. A feint pass is used here to encourage the defense to shift. The pivoter, if he cannot go through, gives the ball back (Diagram 7).

The work learned in these last two drills is very important to our style of play and we find it a simple matter to teach a new play when the basic fundamentals of that play are already learned. This is not only true of the pivot but of all the fundamentals taught in early season. The pivot-pass work that we have given to the whole squad is used a great deal by our guards in feeding and in cutting through a front-line defense.

Kansas State Guard Play

(Continued from page 9)

fundamentals are incorporated in this one simple drill than any other I know.

2. *Two On Two, Double Passing Drill—Full Length of Court.* In Diagram 2 two guards advance the ball against two defensive men. The guards start by lining up parallel to the end line about fifteen feet apart. The defensive men press the guards lightly. 01 passes to 02 and cuts around him creating an outside screen as he receives a double pass (short float pass) from 02. 01, using a low protected penetrating dribble, spreads the defense, stops, pivots and passes to 02 who has also spread the defense and doubled back to meet the pass. Again a screen and double pass are executed, 02 may fake the pass to 01 and then spread the defense by use of the dribble. The process is continued the length of the court.

Guard Play Against Retreated Defense

When a retreating defense is encountered it is important that the guards have a definite method of bringing

the ball into the front court and penetrating the front line defenders.

Our three in, two out, pivot formation has the forwards lining up on the side with our center near the key-hole. The guards advance the ball by use of the dribble and shuttle passes while in a parallel and spread position. This spreads the defense and the shuttle passing conceals our intentions as to which forward will receive the first pass. We try to avoid telegraphing our passes or any movements that would tip off or play into the hands of would-be interceptors or sagging and

play for the interception or shift to that side of the floor. Well-planned shuttle passing, crossing and double passing on the part of the guards will enable them to penetrate the front line without any difficulty and, at the same time, spread the defense for ensuing plays. A good start often means a good ending. The guards must start the play correctly.

We use the following drill to co-ordinate this part of our offense. Two guards and two forwards team up together. The guards advance the ball from the back court by shuttle passing, crossing and double passing. The forwards jockey for position on the side of the court and by use of good footwork and timing come out to meet the ball at the instant the guard is ready to deliver the pass. While co-ordinating the guards and forwards we stress the following:

GUARDS

1. Avoid telegraphing movements.
2. Pass to the open side away from the defensive man.
3. Spread the defense.
4. Use split vision.
5. Keep on balance while handling the ball in order to withhold the pass if necessary, without traveling.
6. Follow passes by breaking

JACK GARDNER began his coaching career at the Los Angeles Athletic Club after getting his master's degree at the University of Southern California. He then coached two seasons at the Alhambra, California, High School and four seasons at the Modesto, California, Junior College. He came to Kansas State in 1939 and had his best year two seasons ago when his team won 20, lost 4 and finished fourth in the NCAA tournament.

overshifted defenses. Probably the worst form of telegraphing is for a guard to dribble up his side of the floor toward his forward team mate, stop, look, step and then pass to him. All five defenders see the pass coming and

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2. Be prepared to receive pass on open side.
3. Don't stand flat-footed and expect to receive pass.
4. Be in motion when receiving the ball then come into balance in order to execute the next move.
5. Protect ball from defensive man.
6. Anticipate and time the pass properly in order to be in position when the guard is ready to deliver.

The Co-ordinating Drill for Guards and Forwards

The guards break either inside or outside of the forwards, then come back out to original position. Diagram 3. 01 and 02 shuttle ball as they advance. 03 and 04 jockey for position. 02 passes to 03 who relays it back out to 01. 01 passes to the other side of 04 and follows his pass to set an inside screen. 04 shoves the ball back out to 01 who has by now returned to a guard position. 01 then passes back to the original side to 03 who has re-shaped his position again to meet the ball. This process of passing from guard to forward and side to side continues. Good passing and timing are stressed.

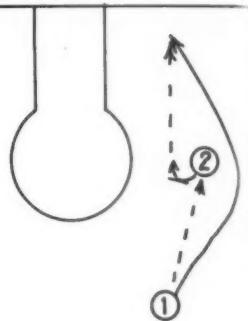
The Second Phase of Guard Play

The second phase of guard play in offense has to do with the follow-through or the action of the guards in the general offensive pattern. Our guards follow their passes, penetrate the defense, and the continuity finds them on the end of scoring situations as often as the forwards and center. Frequently, then, it will be a guard who is the team's leading scorer. Obviously, our guards must possess

offensive ability equal to that of the front-line men.

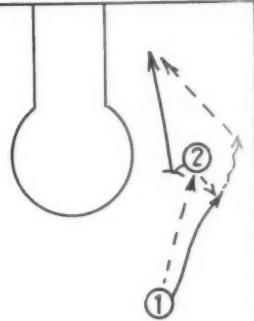
The following plays will illustrate the role our guards play in our offense. It will be noticed that they will follow their passes by either going inside of the forwards to form an inside screen or cutting outside to form an outside screen.

Diagram 4. 01 passes to 02 and follows pass by use of change of direction, cutting to outside to receive return pass from 02. An outside screen is formed to free 01 on a driving dribble to basket.



DIAG. 5

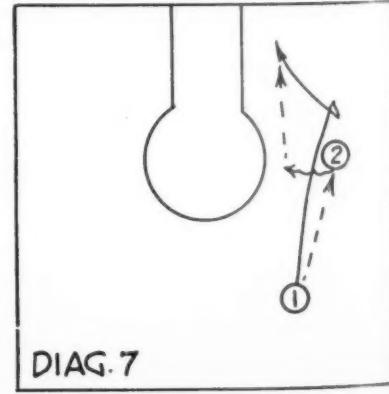
Diagram 5. 02, upon receipt of ball, takes a front turn to pick off the guard of 01. 02 then passes to 01 cutting under.



DIAG. 6



DIAG. 4



DIAG. 7

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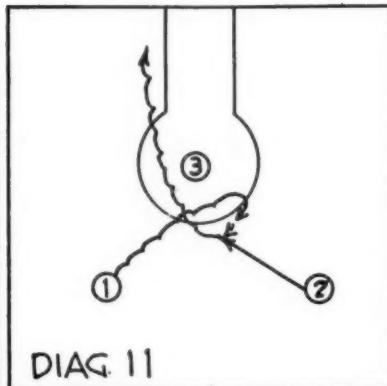
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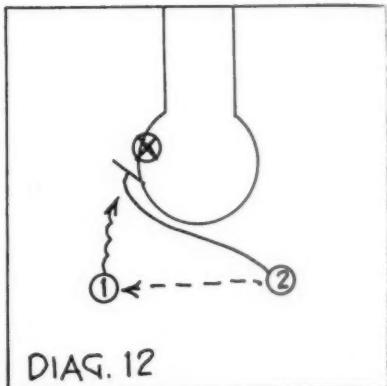
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screen for 02. 02 dribbles, passes to 03 and cuts by post for return pass. 01 may cut away from screen for an optional pass.

Diagram 11. 01 dribbles to position in front of 03, stops and gives a short



pass to 02. A double screen is set to free 02 on his drive for the basket.

Diagram 12. Against a sagging defense, 02 uses a front screen for 01 who dribbles up, sets and shoots over the top of the screen.

The Pre-Game Warm-Up

(Continued from page 40)

a strange floor and have found that the boys hit the net just as regularly as teams which take long acquaintance periods.

I give the boys their fundamental instructions and other suggestions pertaining to the game, as follows, assuming the game starts at 8 P.M.

- All boys are in the dressing room at 7 P.M.
- All boys have their ankles wrapped and any other taping or wrapping that must be done.

- How to guard certain men, how to play certain situations, etc., is emphasized all week and re-emphasized before the boys begin to dress.
- The boys begin dressing so they are ready to go on the floor by 7:40 P.M.; exercises begin then.
- The boys are back in the dressing room at 7:55 P.M.
- The first five are back on the floor at 7:58 P.M. and play begins at 8 P.M.—no time or effort wasted!

Passing Illustrated

(Continued from page 11)

Two-handed underhand passes should be used when the player is close to his teammate, when the teammate is moving toward the player or when the player is moving toward his teammate. It is an excellent short pass for rapid handling of the ball. This pass should be mastered!

The two-handed chest push-pass, is our regular team pass. It is used effectively in most situations, especially where the teammate is farther away than in the two-handed under-hand pass. The speed and quickness of this pass is determined by the nearness of the teammate.

These are some pointers in the use of this pass: keep the ball out in front—out away from the body; place it in home-position where you can shoot, pass, fake or start a dribble—this home-position is the key position before starting any pass action. Study

the home-position or key starting position of all passes that are used.

The proper use of the eyes plays an important part in the accurate handling of the ball. It is important to know that the eyes function in a jerky movement called "flights and perches"—stop and go movements. The important point to remember is that when the eyes are in flight or in action they cannot focus until their movement stops. Therefore, it is important that you practice keeping your eyes staring straight ahead and develop what is called peripheral vision or spread vision—the ability to see action on the right and left sides while looking straight ahead. Rather than eye-action, it is better to have head-action. In the use of head-action there should be a constant focus of the eyes.

In the use of eye-action one runs into the trouble of seeing flash move-

ments and of making flash judgments which get us into trouble in the habit action of handling the ball.

Remember the eyes should be stopped, in focus position, and the head should be moved. Strive for speed vision!

To cover up pass-receivers is an important part of the passer's ability to move the ball into a strategic position for a scoring opportunity. Follow the order of the movements as I present them:

1) Face the possible receiver — note the position of receiver and opponents.

2) Face the receiver at a 45-degree angle — keep the eyes straight ahead — see the receiver and the opponent out of the edge of your eyes.

(3) Without preparatory movements pass quickly to the receiver.

Points to be remembered in covering up:

In step 1, (facing the receiver) stare straight ahead, do not directly focus your eyes on the receiver, try to act as if you don't see anyone. In step 2, change the direction you are facing. Make this change as if you were looking for a new receiver — let your opponents know by your action that you didn't see an opening and that you are looking elsewhere for a new receiver.

While you are completing the first two steps, the ball should be moved to a position so that at the completion of step 2 the pass can be made without a long movement.

Passing Strategy

First, it is important to see the strategic position of the receiver. Play the game through the eyes and mind

CECIL R. MAY graduated from Southwest Missouri State College and took his M.S. degree at Illinois. He has been coaching twenty years: three at Dadeville, Missouri; three at Ash Grove, Missouri; five at Waterman, Illinois and the remainder at East Aurora. He has developed such players as Jack Smiley, former University of Illinois "Whiz Kid"; Bob LaVoy, All-State center in 1944 and John Renneke, All-Conference player from Drake in the Missouri Valley Conference.

of the receiver — put yourself in the shoes of the receiver and think, "what will he do?" Will he fake out and drive back for an opening? Will he continue on out to receive the ball or will he wait? If the opponent is loose you may receive the pass where you are, provided the passer cleverly



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covers up the receiver. The ballhandler must be able to guess the possible action of the receiver.

Second, it is important that you play the receiver's position. Watch out for the possibility that the ball may be tied up if you complete a pass. Don't jeopardize the loss of ball by passing it to a teammate when he is surrounded by a nest of opponents and a held ball may result.

Remember, play the game through the eyes, mind, and shoes of your intended receivers! Try to see and understand the moves and action possibilities of your receivers.

The height of passes in the front court should be in the area of the stomach and chest — passes to set-up shooters should be shoulder high.

Passes in the back court will vary in height. Long passes will be irregular — short passes will follow the front-court pattern.

Keep in mind that deception is largely speed and quickness. Develop quick and snappy passes!

When taking a short rebound use a reaching fake-action; at the same time, look as though you are going to pass out. Do not dribble to the corner.

Our team offense is based upon the short pass with plenty of fight and hustle. Each player is depended upon to score. Any time the ball can be advanced closer to the basket by a pass to an open teammate this must be done. Feel that it is your team responsibility to dribble in and score as often as you can.

Bouncing the ball aimlessly, dribbling across to the side or into the corners is not tolerated when using our regular offense in the front court.

It is necessary to dribble in the back court when bringing the ball up the floor but this should be kept at a minimum — we encourage passing.

NEW FILMS AND BOOKS

Basketball Interpretations and Situations. Prepared by the National Association of Basketball Coaches. 16 mm. film. Order from H. E. Foster, Basketball Coach, University of Wisconsin, Madison, Wisconsin. \$50.00

The purpose of this film is nationwide betterment and uniformity of the interpretations of basketball. The film consists of legal and illegal interpretations of screen and center pivot situations pictured by Howard Hobson of Yale, Bud Foster of Wisconsin, Ellison Ketcham of Denver and Everett Dean of Stanford. These men, working with the same subject matter, have shown uniformity and understanding of the rules and how this phase of basketball should be played. Thirty-five screen and eighteen center pivot situations are covered by these coaches in a way that shows that the basketball rules are accepted in the same way the country over. To this has been added situations dealing with legal and illegal running, dribbling, jump ball, charging and blocking as prepared by John Bunn of Springfield College.

Basketball Coaching Slogans. Published by Chronicle Printing Company, Coldwater, Ohio. Printed on 15 posters, each measuring 7" x 9". \$1.00

These slogans are printed on cards which may be hung up in the locker room so that players are constantly exposed to them. These are some of the slogans: Don't Telegraph Passes . . . Stare Straight Ahead; Pivot Wide and Low; Drills Can Teach You To Handle the Ball and Handle Your Feet.

These Skills Will Do You No Good If You Can't Handle Your Temper; You Fumble Because You Don't Keep Your Eye On the Ball; A Loose Ball Can Be Yours . . . Go Get It!; When Opponents Shoot, Block Your Man Out of the Rebound; Learn To Guard Without Fouling; When Your Opponent Passes, Loose Up On Him and Don't Turn Your Head; Good Ball Handlers Use Finger-Tip Control; Break Loose To Receive . . . When the Passer Is Ready to Pass.

Power Skiing Illustrated, by Tyler Micoleau. Published by A. S. Barnes and Company, New York. Ninety-six pages (quarto size). \$2.95.

This book is beautiful in its conception and execution. By means of excellent drawings the author has employed the visual teaching method in a highly successful way. None of the drawings are extraneous. Each one explains some vital phase of skiing in a way that would be almost impossible for photographs to do.

All the fundamentals of skiing—the walk, the turn, climbing, running, the sidestep, the snowplow, and other are thoroughly explicated. This is an unusual book.

Practice Suggestions

(Continued from page 30)

understand what everyone will do under a certain situation.

Besides supplementing the daily drills, this breakdown of the overall offensive pattern into unit drills will aid the coach in putting across his style of

play and at the same time give him a systematic method of planning his practices. Once the season gets under way the notes taken during games will serve as a basis for checking on his own coaching. The little added effort that the suggestions call for will pay off in the long run with additional victories.

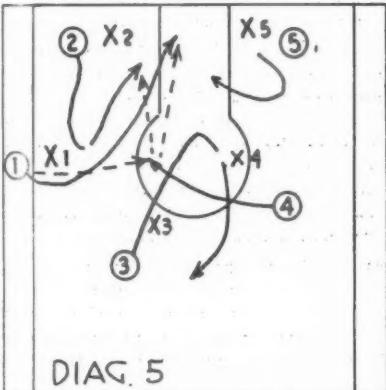
The Revolving Offense

(Continued from page 43)

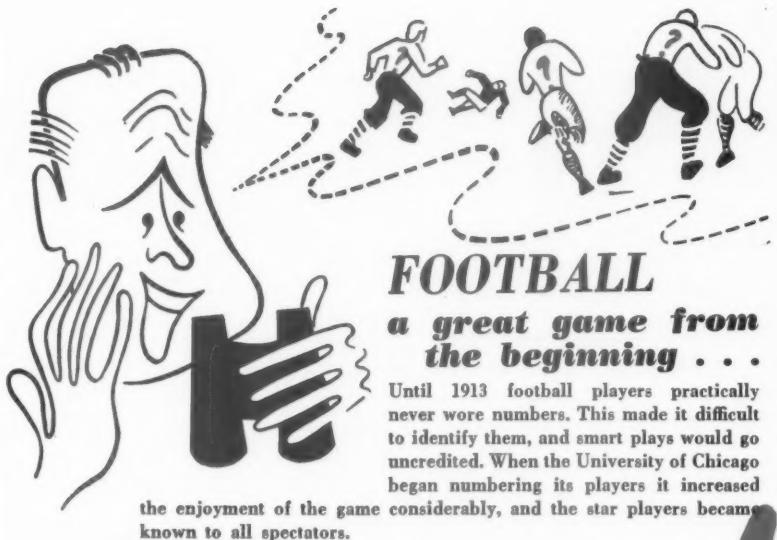
original positions. The legend for the complete sequence starting with A-B-C-D-E is: A-B-C-D-E; C-E-A-B-D; A-D-C-E-B; C-B-A-D-E; A-E-C-B-D; C-D-A-E-B; A-B-C-D-E. Of course, at any time if a player is freed by an out-of-court momentary screen or an ill-timed switch, he will drive in, or as in Diagram 3 if D and E's defensive men switch, E can reverse and follow D as a trailer, being open by switch position. While this revolving offense requires good timing, patience is the virtue to mold the material at hand. The pattern is definite and allows individual aggressiveness on every pass. The ball is continually moving and sooner or later during the course of play, a defensive man will relax allowing an unobstructed drive to the free-throw line for a one-hand push-shot or a drive to the basket.

An out-of-bounds play (see Diagram 5) in keeping with this pattern is as follows and may be used on either side of the front court.

Number 3 starts the play on his signal, breaking in and over to screen 4's defensive man as 4 cuts hard toward



the ball. Two has come up to screen X1. One comes out and drives down for the pass from 4. He will be free unless X2 picks him up on a switch which is often the case. Two turns inboard and is entirely open by position if the switch occurs. Four passes the ball to 2 for the drive-in. Four may be free to drive in with the ball on the initial pass, especially if 5 can keep X5 occupied. Three acts as safety man.



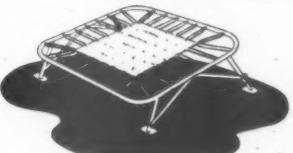
Until 1913 football players practically never wore numbers. This made it difficult to identify them, and smart plays would go uncredited. When the University of Chicago began numbering its players it increased considerably, and the star players became known to all spectators.

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What's Wrong With Athletics In Small High Schools?

By FLOYD H. BAKER

Basketball Coach, North Webster, Indiana, High School

ONE often hears that this or that high school is too small to have athletics and that it should be forced to drop sports. After spending twenty years in large high schools I am now, for the first time, in one of those small high schools which coaches and athletic men in large schools say should be forced to drop sports. I find that, instead of being unable to carry on sports, the little schools, with a very few exceptions, carry out their programs more efficiently than some of their "big brothers" in the larger towns and cities.

To organize this on a plane where there is a working basis for comparison, I will divide it into (1) coaching (2) equipment (3) medical care (4) play and travel facilities and (5) participation.

The caliber of coaching in the small school, especially since World War II, is extremely high. The coaches are required by law in a great majority of our states to have a physical education major which teaches them the academic as well as the participation approach to games. They must have psychology which helps them to understand, guide, and direct adolescent youth. The training they get from anatomy and physiology, treatment of athletic injuries, recognition and therapy of common injuries and diseases, and the laws of sanitation and good health insure the proper care of the young athletes health. The great majority of our younger coaches have had the benefit of G. I. training and thus have a valuable addition to the regular training and experiences gained in college.

The training programs and equipment of the small colleges and universities is now closer to that of the larger and wealthier schools and thus all our graduating physical education majors have a similar training as to curricula and quality of instruction. The salaries in the county and township schools are, in most cases, equal to or above those of the small towns. Many times the larger schools have to "up" their usual payment of "so much flat" per major sport to get the better young coaches to come into the high pressure jobs where there is more work and the cost of living is higher.

The problem of equipment gives the edge to the big and wealthy school —

but not much. The drawing power of basketball in some sections and football in others has given the small school enough revenue to buy adequate and worth-while equipment. It is still an accepted practice in most small schools for boys to furnish their practice equipment with the exception of football and track where they must furnish only shoes. Sometimes this is a good thing as it teaches boys to care for equipment and to know that its cost is an important item in an athletic program. There is a precedent for this in major league baseball where the players furnish their own gloves, shoes, and sweat socks.

Small school football is often the place where the little fellow has trouble holding up. The fact that so many boys are needed to put a team on the field plus the high cost of equipment often leads to the use of unsafe equipment such as old, loose, head gears and worn-out shoulder pads. Pants with poor knee-pads lead to "house maid's knee" and severe after-effects from continued bruising.

Insofar as balls (all kinds), bats, vaulting poles, hurdles, etc. are concerned, the small school, due to smaller squads, usually have more equipment per athlete than do the big schools.

With the item of medical care I find little to choose. The preliminary medical examination required by most states gets the school off to an equal start, sound equipment still helps keep them even on the playing court. When an injury occurs, how is it treated? Most simple injuries need only the following: (1) hot or cold pack treatment, (2) bandaging, (3) heat from light rays, (4) massage or (5) rest or limited action. Any coach with a physical education major can take care of all these simple treatments. Hot and cold water is available in any school, hot water

FLOYD BAKER has sent eight teams to the state tourneys in twelve years. Seven of these were in the Ohio class A division. In both 1943 and '44 his teams had undefeated seasons but lost in the semi-finals of the state tournament. Going to Richmond, Indiana, High School in 1945 his teams finished third twice and in second place once in the tough Indiana North Central conference.

bottles are a household standby and the cost of a heating lamp is so moderate that nearly every school has one. What about serious injuries? Here a physician's care is needed and most small town doctors give their time as readily as doctors in large towns. The injured athlete is usually one of their "babies" or at least a patient in times of other medical needs.

In the case of a star player being injured, is the small school coach more prone to play the boy when his condition is questionable from injury or sickness than the coach in the large school? Individual differences of coaches character being discounted, I believe the small school coach will have the better record. Why? He knows the boy better, usually because of the smaller squad, and there is less pressure on him to win. He must also remember that if he uses a boy in questionable condition and permanently injures him by so doing, his chances of finding a replacement are practically nil while the big school coach can move up his second, third, or even fourth string replacement and do about as well. More pressure to win, less intimate personal relations, and a large number of replacements usually lead to the athlete of questionable health playing more often in the big school than in the small.

Play and travel facilities favor the big school. Larger dressing rooms for larger squads may be an even break because the small squad needs less room. The basketball courts are the biggest play factor in favor of the large school. Football, is also, because of scientifically grown turf. Track, tennis, golf, and cross-country are about even. Playgrounds, especially at schools, might be considered a part of play facilities since our athletes spend much individual effort to improve on these mediums. If we consider the school playground as a part of the athletic set-up, the small school wins hands down when the over-all picture is considered. Lack of space in cities will usually cause the city and town schools to lose in this comparison. The small school has more space to put more facilities.

With travel the two are about even. Buses are the most common carriers used by all and while the ordinary school bus used by the small school is

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- Report even slight injuries At Once.
- Look Down the Floor while you Dribble.
- Athletes are imitated by Youngsters. Set a good example on and off the floor.
- Don't wait for the pass to reach you. Meet The Ball!
- A loose ball can be yours. Go Get It.
- Relax before shooting that foul.
- Referees make fewer mistakes than You do.

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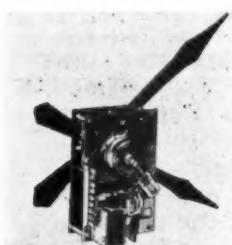


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THIS new sports timer movement has been designed to aid schools, colleges and playgrounds which must operate on a limited budget. With local material and student help, scoreboards may be built at a saving of approximately 75 percent. All movements are shipped complete with instructions and wiring diagrams so that installation can be done by anyone. Standard parts provide remote control from the side lines. The timers are available in six basketball models and eight football models. Manufactured by Montgomery Manufacturing Company, 549 West Washington Boulevard, Chicago, Illinois.

IN EQUIPMENT AND IDEAS



LARGER in frame and canvas, this new Nissen trampoline (Model 459-T) combines the heavy-duty advantages of Model 5000-T, the original arched forces model with those of the Flashfold whose quick-folding and moving features have made it popular for both indoor and outdoor use. Model 549-T may be used both inside and outside and is the third and latest Nissen model. It has just entered production. Manufactured by Nissen Trampoline, 200 A Avenue, N. W., Cedar Rapids, Iowa.



not as commodious and as easy riding as those used by the larger schools, the trips are not so long and the need for riding comfort not so great. As one coach put it "If they're not able to stand the 'rigors' of a school bus trip they aren't able to play."

It is very difficult to make a true comparison in the matter of participation because of the different and varied conditions. From the standpoint of the percentage of the student body that participate in competitive athletics we find that in the small schools usually half to three-fourths of the boys are out for basketball. This would be impossible, even with a great intramural program, in schools like Chicago's Lane Tech, Indianapolis' Arsenal Tech, or Cleveland's Collinwood. The boy in the small school is in more athletic surroundings due to his environment of hunting, fishing, swimming, hiking, etc., than his city cousins. He has less access to movies, music, library facilities, dramatics, art, and career jobs than the boys of larger schools and hence athletics is his big area for enjoyment and entertainment.

The last question I'd like to pose is this: Don't the boys in the small school, where the pressure to win is less on the athlete and the coach, where the friendship of small squads is closer, and where the competition for squad berths is less stern, find more joy, better health, and develop more character than do the boys on the squads of the larger schools?

From Here and There

(Continued from page 4)

quette football and basketball star, has been named head football coach at Carroll College, Waukesha, Wisconsin. He has been coaching at St. Norbert College and Menominee, Michigan, High School. . . Roy Leaf, Colby College graduate, has been appointed head coach of all sports at Coburn Classical Institute, Waterville, Maine. . . Gate of Heaven, High School in Boston has decided to sponsor football again. Ed Grant, Boston College graduate, will coach the team. . . Al Shaw moves from his position as basketball coach at Ann Arbor, Michigan, High School to a similar position at Williams College. Shaw has been prominent as a basketball official in college and professional circles. . .

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The Changing Sport Picture

WE wonder how many of our older readers have noticed how the schedules of the various sports have been moved up. We noticed it in a somewhat vague way regarding the reports of the various state basketball tournaments. Because so many of these tournaments were concluded in late March it was impossible to include the reports in our April issue, and the summary usually appeared in the May issue. Following the war we started carrying the reports in our April issue and each year the number of states from which information was lacking was considerably less than the previous year. This coupled with the fact that we now mail the Journal a week earlier each month than prior to the war.

The whole fact was brought forcibly home when we noticed a basketball schedule of our high school. In our old playing days the first league game was played on the Friday that Christmas vacation commenced. Each year our coach gave us the same pep talk saying the nicest Christmas present we could give him, our school and ourselves was a victory in the first league game.

Today the old alma mater starts basketball competition in the middle of November and by Christmas recess has three or four league games under its belt. We also noticed that the season is completed on February 24.

All of the above presents a background for some interesting observations. Has the earlier start of various sport seasons been prompted by the same trend in professional sports? In other words, have professional football games in August turned the sporting public's mind from baseball to football? With the professional hockey and professional basketball season under way by October 19, does the sporting public begin to think of indoor and the so-called sports of the winter season? Does the earlier conclusion of basketball have anything to do with the great revival of scholastic baseball? Is a longer track season responsible for the vast improvement in times and distances in that sport? In northern climes will the earlier conclusion of the indoor season cause a change of high school facilities and cause a greater emphasis on the fieldhouse type construction which provides facilities for track and baseball?

Finally, will a new indoor sport come into the picture to fill the void or will some of the so-called lesser sports, such as volley ball, grow to major status and interscholastic play? All very interesting thoughts and maybe twenty years hence when we celebrate our golden anniversary the answers will be known.

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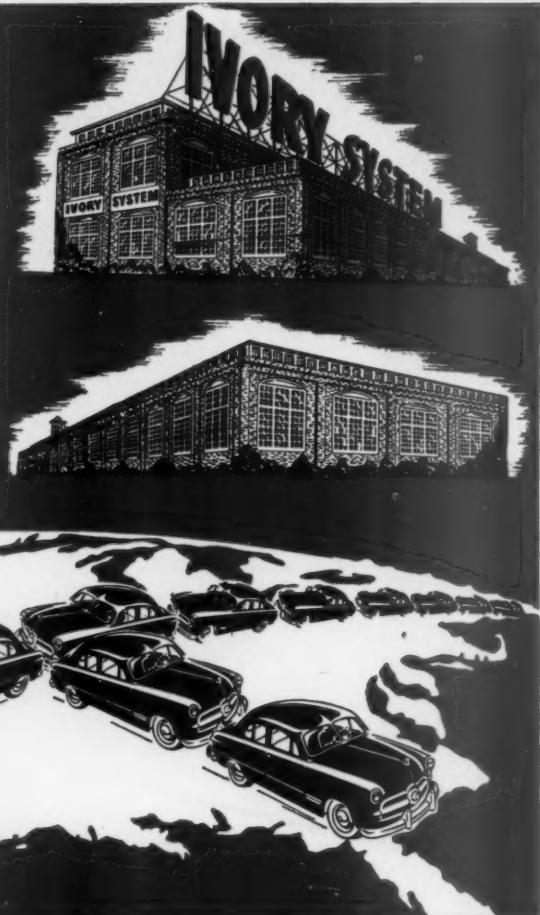
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